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IN THE

Supreme Court of the United States

OCTOBER TERM—1976

76-769

WESTINGHOUSE ELECTRIC CORPORATION,

Petitioner,

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.,

and

THE STATE OF NEW YORK

PETITION OF WESTINGHOUSE ELECTRIC CORPORATION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

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PETITION OF WESTINGHOUSE ELECTRIC CORPORATION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

This petition for certiorari is occasioned by the Second Circuit's blanket injunction against the issuance by the Nuclear Regulatory Commission (Commission) of any individual commercial licenses for certain mixed oxide fuel related activities during the interim period prior to

the Commission's completion of a pending generic rulemaking proceeding. This petition is filed on behalf of Westinghouse Electric Corporation, an applicant for a license to construct and operate a mixed oxide fuel fabricating facility,[1] a participant in the aforesaid rulemaking proceeding, and an intervenor in the proceedings before the Second Circuit.

Opinions Below

The subject of this proceeding is the Commission's interim policy announcement dated November 11, 1975, published in the Federal Register on November 14, 1975 (40 F.R. 53056), as corrected in the Federal Register for December 24, 1975 (40 F.R. 59497). It is set forth in Appendix A hereto.

The Second Circuit's opinion (by District Judge Pierce; concurred in by Associate Justice Clark and District Judge Owen) as issued May 26, 1976, and amended August 12, 1976, which reversed the Commission in major part, is reported at 539 F.2d 824 and is set forth in Appendix B. The Second Circuit's per curiam supplemental opinion, issued September 8, 1976, denying rehearing, is not yet reported and is set forth in Appendix C.

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[1] On July 17, 1973, Westinghouse filed with the Commission an application for a license to construct and operate a mixed oxide fuel fabricating facility (Commission Docket No. 70-1432). The facility, if and when licensed, is expected to manufacture fuel rods with pellets containing mixed oxide fuel, a mixture of uranium and plutonium oxide powder. In addition to the detailed health, safety, environment and safeguards requirements set forth in applicable Commission regulations, commencement of construction will depend upon the analysis and balancing of the three eligibility criteria set forth in the Commission's order of November 11, 1975, discussed *infra*.

Jurisdiction

The Second Circuit's judgment of May 26, 1976, reversing the Commission in part, is set forth in Appendix D. Its order of September 8, 1976, denying timely petitions for rehearing, is incorporated in its supplemental opinion of that date (Appendix C). Its orders of September 8, 1976, denying timely suggestions for rehearing in banc, are set forth in Appendix D. This petition for certiorari is being filed within the prescribed period of 90 days after September 8, 1976. Jurisdiction is conferred on this Court by 28 U.S.C. § 1254(1) and § 2350(a), and 42 U.S.C. § 2239(b).

Question Presented

Section 102 (2) (C) of the National Environmental Policy Act of 1969 (NEPA) requires that all federal agencies include an environmental impact statement (EIS) "in every recommendation or report on proposals for legislation or other major federal actions significantly affecting the quality of the human environment". Pursuant to this requirement, the Atomic Energy Commission (AEC), the predecessor of the Commission, commenced the preparation of a generic EIS prior to expanding present use of mixed oxide fuel to wide-scale use in light-water cooled nuclear power reactors (GESMO). The Commission thereafter announced that individual interim licenses could be issued where warranted under certain specific conditions based on the Commission's assessment of the likely benefits of allowing such interim licensing as well as the possible adverse impacts.

The Second Circuit restrained the Commission from issuing any commercial licenses for certain mixed oxide fuel related activities until after the Commission makes

a final decision on all questions presented by GESMO, on the ground that such interim licensing would violate NEPA, notwithstanding the Commission's finding that controlled interim licensing would be in the overall public interest.

The question presented is whether the Second Circuit's blanket injunction against such interim licensing was erroneous because it (1) failed to give due regard to the substantial hardship it would admittedly cause to the overall public interest including the public interest in the national environmental policy embodied in NEPA, and (2) was prematurely issued since no EIS relating to any particular activity was before the Court and any interim license which the Commission might grant thereon would be subject to court review on a full record.

Statutes Involved

The statutes involved are set forth in Appendix E (beginning at p. A-81). They are:

42 U.S.C. § 4332 (being Section 102 of the National Environmental Policy Act);

42 U.S.C. § 2133 and § 2201(b) (being Section 103 and Section 161b of the Atomic Energy Act as amended).

Statement of the Case

On February 12, 1974, the AEC publicly announced that in accordance with NEPA and the Council on Environmental Quality's Guidelines of August 1, 1973, the AEC had commenced the preparation of the draft GESMO and, on the completion thereof, would, as appropriate, publish for comment proposed rule changes governing recycle of plutonium in light-water cooled nuclear power reactors

(39 *Fed. Reg.* 5356). The availability of the draft GESMO was announced by the AEC on August 21, 1974 (39 *Fed. Reg.* 30186). Subsequent thereto, on December 10, 1974, the AEC announced that a public hearing would be held on the GESMO (39 *Fed. Reg.* 43101).

On May 8, 1975, the Commission announced its provisional view with respect to the possible deferral of future licensing actions related to mixed oxide fuel, based on its consideration of relevant factors and subject to the consideration of public comments. (40 *Fed. Reg.* 20142). The Commission set forth the following guidelines to be observed in resolving the deferral issue in such proceedings:

> "1. there should be no additional licenses granted to use of mixed oxide fuel in light water nuclear power reactors except for experimental purposes; and
>
> 2. with respect to light water nuclear power reactor fuel cycle activities (activities other than nuclear power reactor construction and operation) which depend for their justification on wide-scale use of mixed oxide fuel in light water nuclear power reactors, there should be no additional licenses granted which would foreclose future safeguards option or result in an unnecessary 'grandfathering'. This would not preclude the granting of licenses for experimental and/or technical feasibility purposes."

Over 200 comments from the general public, environmental groups, utilities and the nuclear industry were filed in response to the Commission's invitation. Although the environmental groups favored the licensing ban, the utilities and the companies in the nuclear industry urged the Commission to retrench from its provisional view because

of the staggering costs associated with a delay in the orderly development of mixed oxide fuel technology, costs which ultimately would have to be passed on to the rate-paying public.[3]

After consideration of all the comments submitted, the Commission reconsidered its prior proposed blanket ban on licensing of mixed oxide fuel related activities, and in its public policy announcement of November 14, 1975 (40 *Fed. Reg.* 53056) concluded that interim licenses could be issued for fuel recycle related activities, the eligibility of which would depend on criteria calling for the analysis and balancing of specified factors. These criteria were stated to be (40 *Fed. Reg.* at 53062):

> "(1) Whether the activity can be justified from a NEPA cost-benefit standpoint, without placing primary reliance on an anticipated favorable Commission decision on wide-scale use of mixed oxide fuel;
>
> (2) Whether the activity would give rise to an irreversible and irretrievable commitment of resources that would unjustifiably foreclose for the activity substantial safeguard alternatives that may result from the decision on wide-scale use; and
>
> (3) The effect of delay in the conduct of the activity on the overall public interest."

The Commission also concluded that use of mixed oxide fuel in light-water nuclear power reactors, which in any

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[3] Comments by many utilities and companies in the nuclear industry, including Westinghouse, set forth evaluations and calculations on the resultant cost increase in uranium ore requirements, enrichment requirements, carrying charges on spent fuel inventories, and expansion of reactor spent fuel storage pools, which would result from a delay in plutonium recycle.

event could not become wide-scale use because of practical constraints, may be continued in the interim.

The basis of the Commission's general conclusion that individual interim licenses may be issued where warranted, and under the conditions disclosed in the notice, was plainly set forth in the notice (40 *Fed. Reg.* at 53061):

> "While the Commission is properly mindful that certain licensing actions have the potential for foreclosing subsequent alternatives, it cannot disregard the equally hard reality that *inaction or a blanket prohibition on fuel recycle related actions could also foreclose or substantially impede realization of energy alternatives which may contribute significantly to meeting national needs.*" (Emphasis supplied.)

Disagreeing with the Commission's expert judgment in a highly technical and specialized field, the Second Circuit, in enjoining all interim commercial licensing, took the position that the critical national need to develop new sources of energy and to recycle dwindling uranium reserves "cannot outweigh the far-reaching national concerns embodied in NEPA." (539 Fed. 2d. at page 845). The Court took this position despite NEPA's clearly enunciated policy that "it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs and resources to the end that the Nation may . . . enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." (42 U.S.C. Sec. 4331 (b)(6)).

Reasons for Granting the Writ

1. National Importance of the Case.

It is no secret to this Court that the United States is presently grappling with serious energy problems which, unless appropriate action is taken thereon, can have potentially disasterous economic consequences. Notwithstanding the Arab oil embargo which occurred at the end of 1973, this country has been unable to mobilize the resources and talent necessary to put together a long-term program for energy self-sufficiency in order to forestall disruption of the domestic economy by the whims of foreign forces.

Despite both Presidents Nixon and Ford hailing programs calling for energy self-sufficiency and independence, it would be an overstatement to say that this country is not in any better condition in this respect than it was immediately prior to the Arab oil embargo. Indeed, a recent Wall Street Journal article laid the situation out quite frankly and unabashedly.[3] It noted that in the passing of the economic "pause" of recent months, the economy is beginning to show signs of increased growth which will depend upon a larger supply of energy resources, particularly of petroleum. One of the major uses for such petroleum is the burning of oil in power generating stations for the purpose of producing electricity. In discussing the upcoming meeting of the Organization of Petroleum Exporting Countries (OPEC) scheduled for December 15, 1976, at which price increases of 10% to 20% are expected, the article stated:

> "The OPEC members are closely watching the demand for petroleum products in the oil-consuming

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[3] The Wall Street Journal, November 11, 1976, p. 1, 6th Col.

> markets of the U.S. and Western Europe for this is the key factor determining the size of the price increase. Of course, as demand rises at home, the U.S. must import ever more of the costlier foreign oil because domestic oil output has been declining since reaching a peak in 1970. *The U.S. currently imports more than 40% of its oil, compared with only 29% in 1973, the year of the oil embargo.*" (Emphasis added).

and further:

> "A major reason for the increase in demand for residual oil is the rapidly increasing use of oil by U.S. electric utilities. The Edison Electric Institute estimates that utilities will burn 597 million barrels of oil this year, up from 507 million barrels in 1973. This is despite an increase in the use of coal and the starting up of nuclear power plants. Until the oil embargo, electricity output was growing at the rate of about 7% a year. But in 1974 there was no growth in output, and last year it was up by only 4%. But this year's growth is expected to be 6%."

It is not necessary to recite in detail in this petition the dislocating consequences that resulted from the Arab oil embargo of 1973. To be recollected are the long lines at the gasoline stations, the disruptions in orderly business planning, the impacts on the contractual relationships between companies because of the triplefold or quadrafold increase in prices for raw and unfinished materials, resultant substantial increase in prices for finished goods, and the abnormal increase in the number of bankruptcies and insolvencies.

It is against this backdrop that a delay in the recycling of plutonium, however brief, must be viewed. One of the

most significant aspects of plutonium recycle is the resulting preservation of this country's natural energy resource of uranium. Immediate recycle of plutonium recovered from spent fuel has been projected to save about 130,000 tons of uranium trioxide through the year 1995, which savings is equivalent to 10 billion barrels of oil or 2 billion tons of coal.[4] Clearly the decision of the Second Circuit to declare a moratorium on the granting of commercial licenses for mixed oxide fuel recycle activities is one of the utmost national importance that should be considered by this Court.

2. Conflict with This Court's Recent Decision in Kleppe.

As will be shown hereafter, the Second Circuit's decision is squarely and directly *contra* to this Court's decision on June 28, 1976, in No. 75-552, *Kleppe* v. *Sierra Club,* 96 S.Ct. 2718.

In *Kleppe,* this Court was faced with the issue of whether NEPA required the Department of the Interior and other Federal agencies to prepare a comprehensive environmental impact statement prior to allowing the further development of coal reserves on federally owned or controlled land in the Northern Great Plains region. This Court held that NEPA did not require the preparation of such a statement in the absence of an existing proposal for region-wide action, and in view of the existence of individual environmental impact statements for the four mining plans in a particular geographical section of that region, which plans had been submitted for approval by the Secretary of the Interior.

The following views expressed by this Court in *Kleppe* (96 S.Ct. at p. 2729), in reversing an injunction restrain-

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[4] 1 Draft GESMO, pp. S 8-10.

ing approval of the plans, clearly demonstrate the error of the Second Circuit in enjoining interim commercial licensing herein:

> "Assuming that the Court of Appeals' theory about 'contemplation' of regional action would permit a court to require preproposal preparation of an impact statement, the court's injunction against the Secretary's approval of the four mining plans in the Powder River Basin nevertheless would have been error. The District Court had found that respondents would not have been entitled to an injunction against any individual projects even if their claim of the need for a regional impact statement had been valid, because they had shown no irreparable harm that would result absent such an injunction and the record disclosed that irreparable harm *would* result to the intervenors who sought to carry out their business ventures and to the public who depended upon their operations. (Emphasis by the Court) The Court of Appeals made no finding as to the equities at the time it originally entered the injunction; when it continued the injunction following its decision on the merits, it stated only that the 'harm' justifying an injunction 'matured' whenever an impact statement is due and not filed. But on the Court of Appeals' own terms there was in fact no harm. First, the Court of Appeals itself held that no regional impact statement was due at that moment, and it was uncertain whether one ever would be due. Second, there had been filed a comprehensive impact statement on the proposed Powder River Basin mining plans themselves, and its adequacy had not been challenged either before the District Court or the Court of Appeals in this case, or anywhere else. *Thus, in simple equitable terms there was no grounds for*

> *the injunction: the District Court's finding of irreparable injury to the intervenors and to the public still stood, and there were—on the Court of Appeals' own terms—no countervailing equities.*" (Emphasis added)

The Second Circuit's injunction against the Commission's announced policy of allowing individual interim licensing of mixed oxide fuel recycle activities was erroneous because it utterly lacked any factual foundation or basis that would justify the grant of such drastic and extraordinary relief. The record clearly established that a delay in interim licensing would occasion substantial and irreparable harm to the utilities, the nuclear industry and the public who depend upon them for electricity generated to a large extent by nuclear energy.[5] On the other hand, the *mere announcement* by the Commission of its interim licensing policy that certain activities *may* be licensed upon subsequent compliance with the Commission's licensing requirements could not in any fashion occasion harm to the petitioners below or to the environment. Quite to the contrary, harm, if any, could only mature, at the earliest, if and when a license is issued and action taken thereon, but not before then. By restraining the Commission from proceeding with allowance of interim licensing, the Second Circuit effectively foreclosed any person from even being able to demonstrate what harm,

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[5] At 539 F.2d 833, the Second Circuit noted: "Comments received from the nuclear power industry recommended generally that the Commission proceed to interim licensing of certain restricted activities prior to the final decision on GESMO. Consumers Power Company, a licensee of two plants, stated that a delay of plutonium licensing until 1978 would cost it six million dollars in additional outlays for enriched uranium and would cost the entire nuclear industry some thirty-five to fifty million dollars for spent fuel storage. (See Jnt. App. at 209)."

if any, could result from the grant of a particular license, applying the NEPA procedural requirements of the Commission, including the analysis and balancing of the interim licensing eligibility criteria enunciated in the Commission's policy announcement.

Moreover, in the posture of the case before the Second Circuit, its determination that interim impact statements for interim licenses would necessarily be inadequate under NEPA (Supplemental Opinion Denying Rehearing, A-76) was premature. As this Court emphasized in *Kleppe*:

> "Even had the Court of Appeals determined that a regional impact statement was due at that moment, it still would have erred in enjoining approval of the four mining plans unless it had made a finding that the impact statement covering them inadequately analyzed the environmental impacts of, and the alternatives to, their approval. So long as the statement covering them was adequate, there would have been no reason to enjoin their approval pending preparation of a broader regional statement . . . ." (96 S.Ct. at 2729, Note 16)
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> • • •
>
> "Nor is it necessary that petitioners always complete a comprehensive impact statement on all proposed actions in an appropriate region before approving any of the projects. . . . [A]pproval of one lease or mining plan does not commit the Secretary to approval of any others . . . . Thus, an agency could approve one pending project that is fully covered by an impact statement, then take into consideration the environmental effects of that existing project when preparing the comprehensive statement on the cumulative impact of the remaining proposals." (96 S.Ct. at 2733, Note 26)

In the instant case, no individual impact statements with respect to any licensing actions were before the Second Circuit. Therefore, the Second Circuit prematurely judged that all such environmental impact statements at whatever stage of preparation in connection with individual licensing actions could never be adequate merely because of the pendency of a broader, programmatic impact statement on the wide-scale use of mixed oxide fuels.

Furthermore, until such time as an interim license is issued supported by a final environmental impact statement, the mere announcement by the Commission of the circumstances under which interim licenses would be issued cannot be deemed a "final order" within 42 U.S.C. 2239(b) and 28 U.S.C. 2342(4), which is a requisite for the Second Circuit's exercise of direct appellate jurisdiction herein. *See: Citizens for a Safe Environment* v. *AEC,* 489 F. 2d 1018, 1021-22 (3rd Cir. 1974); *Ecology Action* v. *United States Atomic Energy Commission,* 492 F. 2d. 998, 1001 (2nd Cir. 1974).

In *Kleppe,* this Court emphasized (96 S.Ct. at 2729, Note 15):

> ". . . But the time at which a court enters the process is when the report or recommendation on the proposal is made, and someone protests either the absence or adequacy of the *final impact statement. This is the point at which an agency's action has reached sufficient maturity to assure that judicial intervention will not hazard unnecessary disruption."* (Emphasis supplied)

See also: *Port of Boston Marine Terminal Ass'n.* v. *Rederiaktiebolaget,* 400 U.S. 62, 71 (1970).

CONCLUSION

In view of the critical national need for energy and for the reasons set forth herein and in similar petitions heretofore filed, such as the petition of Allied-General Nuclear Services, Et. Al. (No. 76-653), or which may hereafter be filed, the petition of Westinghouse Electric Corporation for certiorari should be granted.

Respectfully submitted,

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APPENDIX

APPENDIX A

Nuclear Regulatory Commission's Interim Policy Announcement Published November 14, 1975 (40 F.R. 53056) As Corrected December 24, 1975 (40 F.R. 59487)

NUCLEAR REGULATORY COMMISSION

Mixed Oxide Fuel

Scope, Procedures and Schedule for Generic Environmental Impact Statement and Criteria for Interim Licensing Actions

In the May 8, 1975 FEDERAL REGISTER (40 FR 20142), the Nuclear Regulatory Commission requested public comment on the subject of procedures for decisions relating to wide-scale use of mixed oxide fuel [1] in light water nuclear power reactors. In order to focus attention on the major elements of the decisions it would have to make, the Commission stated its provisional views in that notice. The present notice states the Commission's conclusions, reached in light of the extensive public comments received by the Commission and the Commission's further deliberations. In particular, this notice:

Sets forth the Commission's determination that the subject of wide-scale use of mixed oxide fuel in the light water power reactor fuel cycle requires a full assessment of safeguards issues before the Commission's decision is made;

Specifies the procedures and schedule to be followed for completion of the environmental impact statement on wide-scale use of mixed oxide fuel and for the conduct of the associated hearings; and

Sets forth criteria under which certain licensing actions can proceed in the interim prior to the Commission's decision on the wide-scale use of mixed oxide fuel.

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[1] Fuels containing both plutonium oxide and uranium oxide.

Summary

After a careful review of all comments received on its May 8th provisional views, the Commission has determined that the subject of wide-scale use of mixed oxide fuel in the light water power reactor fuel cycle requires a full assessment of safeguards issues before its decision is made. At the same time, the Commission firmly believes that it is in the national interest to expedite the decision-making process to the extent consistent with sound and full examination of the issues.

Safeguards measures are those measures employed to prevent the theft or diversion of special nuclear materials and to prevent the sabotage of nuclear facilities. The Commission has directed its Staff to prepare, on an accelerated schedule, and then to circulate for written comment, a safeguard supplement to the draft environmental statement which was issued by the Atomic Energy Commission Staff in August, 1974. The supplement will include an analysis of the costs and benefits of alternative safeguards programs, and a recommendation as to safeguards programs associated with wide-scale use of mixed oxide fuel. The Commission has also directed its Staff to expedite preparation of all aspects of the final environmental statement, including safety and environmental matters as well as safeguards matters. Proposed rules reflecting the final statement's analysis of those matters will be published for public comment by the Commission.

In issuing its provisional views on May 8, the Commission contemplated that a final environmental statement would not be completed until late 1976. It now appears possible to complete the draft safeguards supplement in early 1976, and to complete all aspects of the final environmental statement in mid-1976.

The Commission has determined that, in the interest of informed decisionmaking, public hearings will be held on

the final statement and the proposed rules relating to wide-scale use. The Commission regards a decision-making process that is both sound and expeditious to be of crucial importance, and believes that both considerations can be compatibly accommodated in its public hearing procedures. Such an accommodation will be fostered by a legislative-type hearing using a mixture of written and oral presentations, in which participants can be examined by the presiding board on relevant policy, factual and technical issues.

The legislative-type hearings will begin as soon as that portion of the final statement dealing with health, safety, and environmental matters is published. Legislative-type hearings will also be held on safeguards matters when that aspect of the final statement is completed. The Commission expects that these hearings will be concluded by the end of 1976. The legislative-type hearings may be followed by adjudicatory-type hearings on particular issues if need for further hearings on such issues is demonstrated to the Commission. If there is no demonstrated need for adjudicatory-type hearings, the Commission expects that its own final decision will be rendered in early 1977. The Commission cannot say at this time whether adjudicatory-type hearings will be in order, or how long they would take if held—their actual duration being dependent on the number and complexity of the issues found by the Commission to need adjudicatory treatment.

The Commission has reappraised the guidelines it set forth in its provisional views for determining what related activities could be permitted pending its final decision. The resulting Commission determinations are summarized below.

Staff Review and Hearings. The Commission has decided that Staff Reviews and hearings relating to fuel recycle activities should continue up to the point of actual licensing.

Interim Licensing of Fuel Cycle Facilities. On the matter of actual licensing, in addition to the eligibility criteria set forth below, a primary concern of the Commission is to assure that any license granted in the interim prior to a final Commission decision on wide-scale use of mixed oxide fuel is (1) consistent with the Commission's responsibilities to protect the public health and safety and the common defense and security, and (2) compatible with environmental values. Licenses for individual fuel cycle facilities will be issued in the interim, where warranted, consistent with the above, only after analysis and balancing of the following factors:

Whether the activity can be justified from a cost-benefit standpoint under the National Environmental Policy Act of 1969, without placing primary reliance on an anticipated favorable decision on wide-scale use of mixed oxide fuel;

Whether the activity would give rise to an irreversible and irretrievable commitment of resources that would unjustifiably foreclose for the activity substantial safeguards alternatives that may result from the decision on wide-scale use; and

The effect of delay in the conduct of the activity on the overall public interest.

The individual impact statement or appraisal, as appropriate, for each individual fuel recycle related licensing action subject to the foregoing eligibility criteria will describe the relationship between the licensing action at issue and the environmental impact statement on wide-scale use, and discuss the application of the criteria to the facts of the case.

Interim Licensing for Use of Mixed Oxide Fuel in Reactors. With respect to interim licensing of mixed oxide fuel in light water nuclear power reactors, the Commission believes that use of such fuel could produce useful additional economic and technical data. Such use would neither

constitute nor markedly contribute to "wide-scale use" because of the limited mixed oxide fuel fabrication capacity that will be available. Such licensing will accordingly be permitted.

Safeguards for Interim Licensing. With regard to existing licensed activities, while experience and continuing study may indicate areas where revisions in its regulations should be made, the Commission is confident that, in light of the types and numbers of facilities and amounts of materials involved, the safeguards framework described below is adequate to enable the Commission to carry out its responsibilities to protect the public health and safety and the common defense and security.

The Commission is of the same view as regards the interim use of mixed oxide fuel in light water power reactors, and the associated transportation of reactor fuel. The Commission believes that those activities, so regulated, impose little or no increase in current levels of risk associated with loss or diversion of plutonium, and that current safeguards will provide adequate protection for interim licensing of its use. Interim licensing of initial processing of spent fuel to separate its uranium and plutonium constituents, of conversion of the uranium constituent to uranium hexafloride, and associated transportation links, can also proceed on the basis of current safeguards regulations. With respect to interim licensing of other fuel cycle activities which may demonstrate eligibility (i.e., plutonium nitrate-to-oxide conversion and mixed oxide fuel fabrication, and associated transportation links), the Commission expects to publish proposed safeguards rules for the interim in the FEDERAL REGISTER at the same time as issuance of the draft safeguards supplement in early 1976. Final safeguards rules for licensing such fuel cycle activities in the interim will be adopted after public comment procedures, at the time the Final Environmental Statement is issued (mid-1976).

The Appendix to this Notice sets forth, in sequential manner, the projected times for completion of the draft and final environmental impact statements; for publication of safeguards rules relating to interim licensing and rules regarding wide-scale use of mixed oxide fuel; for issuance of notice of hearing; and for the final Commission decision on wide-scale use.

Background

On February 12, 1974, the Atomic Energy Commission (AEC) announced that a generic environmental impact statement would be prepared prior to an AEC decision on the wide-scale use of mixed oxide fuel (also referred to as plutonium recycle fuel) in light water nuclear power reactors (39 FR 5356). On August 21, 1974, notice was published in the Federal Register that a draft environmental impact statement on this matter had been prepared, pursuant to the National Environmental Act of 1969 (NEPA), by the AEC Staff (39 FR 30186).

The principal conclusion in the draft environmental impact statement issued by the AEC Staff was that utilization of plutonium resources as recycle fuel in light water nuclear power reactors should be approved. The AEC Staff reached favorable conclusions with respect to matters of public health and safety, and the environment. The AEC Staff found in this connection that the total environmental impact from the nuclear fuel cycle, using mixed oxide fuel, would be slightly reduced, and that the safety of light water power reactor operations would not be adversely affected. The draft statement further reflected that uranium reserves would be extended, and that requirements for uranium enrichment would be reduced. Although the draft environmental impact statement did not set forth a fully developed and detailed cost-benefit analysis of alternative safeguards programs, it did review the then current safeguards program, presented some cost estimates

for safeguards, and noted numerous measures that could contribute to upgrading of that program. The Staff concluded that the safeguards problems would be manageable and that there did not appear to be any safeguards related rationale sufficient to delay a decision to permit the use of mixed oxide fuel for light water power reactors or associated production activities.

The AEC Staff stated in the draft statement that indications at that time pointed to decisions on safeguards upgrading within about one year after issuance of the final environmental statement. At the time, the AEC Staff expected that this separate decision on the safeguards measures necessary for wide-scale use would be made by mid-1976. However, this estimate did not include any time for preparation and issuance of draft and final environmental impact statements on the safeguards measures or any public proceeding.

In a January 20, 1975 letter to the Nuclear Regulatory Commission, the President's Council on Environmental Quality expressed the view that, although the draft environmental statement was well done and reflected a high quality effort, it was incomplete because it failed to present a detailed and comprehensive analysis of the environmental impacts of potential diversion of special nuclear materials and of alternative safeguards programs to protect the public from such a threat. The Council believed that such a presentation should be made by the Nuclear Regulatory Commission before its final decisions on plutonium recycle. The Council also expressed the view that the Nuclear Regulatory Commission should take care to avoid actions which would foreclose safeguards alternatives or which would result in unnecessary "grandfathering" during the period in which the safeguards issue is being resolved.

On May 8, 1975, following its consideration of the relevant issues, the Commission published in the FEDERAL REG-

ISTER its provisional views regarding the decisional course it would follow on wide-scale use of mixed oxide fuel (40 FR 20142). The Commission's provisional views were that, subject to consideration of comments to be received:

(1) A cost-benefit analysis of alternative safeguards programs should be prepared and set forth in draft and final environmental impact statements before a Commission decision is reached on wide-scale use of mixed oxide fuels in light water nuclear power reactors.

(2) There should be no additional licenses granted for use of mixed oxide fuel in light water nuclear power reactors in the interim prior to the decision on wide-scale use except for experimental purposes; and

(3) With respect to light water nuclear power reactor fuel cycle activities (activities other than nuclear power reactor construction and operation) which depend for their justification on wide-scale use of mixed oxide fuel in light water nuclear power reactors, there should be no additional licenses granted in the interim which would foreclose future safeguards options or result in unnecessary "grandfathering". This would not preclude the granting of licenses in the interim for experimental and/or technical feasibility purposes.

The Commission indicated in the May 8th Notice that, in developing its provisional position on these issues, it took due account of the views of the President's Council on Environmental Quality, both in terms of the substance of those views, and in recognition of the Council's role in reviewing Federal activities for consistency with the policies of NEPA and in formulating guidelines for the preparation of environmental impact statements.

In the May 8th Notice the Commission requested the views of interested persons on these provisional views. Comments were requested in particular on (1) the relative merits of the Commission's provisional approach to prepa-

ration of the generic environmental impact statement and of the earlier approach adopted by the AEC Staff, or other alternatives, from the standpoint of the relevant policy, factual, and legal considerations; (2) whether the question of deferring future licensing actions related to the use of mixed oxide fuels should be left for resolution in individual licensing proceedings, or addressed by the Commission as a generic matter; and (3) the appropriateness of the Commission's guidelines for resolving the individual licensing actions set forth above. Comments were requested by June 9, 1975.

On May 27, 1975, before the expiration of the original comment period, the Commission held public meetings with industry groups and other interested persons to respond to questions seeking clarification of the May 8th Notice. The comment period later was extended until July 24, 1975.

Over two hundred comments were received in response to the May 8th Notice. These comments have been placed in the Commission's public document room and are available for review by the public.[2]

The comments focused to a major extent on four general issues:

(1) The desirability of completing a cost-benefit analysis of alternative safeguards programs as a part of the Commission decision on the wide-scale use of mixed oxide fuel in light water nuclear power reactors;

(2) The desirability of permitting various related licensing actions to be taken pending a Commission decision on wide-scale use;

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[2] Three supplementary statements received in response to a Staff request for additional information contained a request that certain information submitted be withheld from public disclosure as proprietary information. None of this information is included in this Notice and none of this information has been relied on in reaching any conclusions in this Notice.

(3) The adequacy of present Commission regulations to protect against loss or diversion of plutonium associated with related licensing actions in the interim period; and

(4) The procedures to be utilized by the Commission in reaching a decision on wide-scale use of mixed oxide fuel, including hearing procedures.

With respect to those comments which specifically addressed the first issue noted above, comments from five utilities, nine environmental groups, four state or local government agencies, two Senators, one Congressman, one vendor, and two private law firms indicated that a cost-benefit analysis of alternative safeguards programs should be included as part of the Commission decision on wide-scale use. Comments from twenty-eight utilities, five vendors, two industry/trade associations, one state government agency, one federal agency, one engineering company, one university department, and ten private citizens indicated a belief that such a cost-benefit analysis was not needed. Comments from five utilities contained a proposal that the decision on wide-scale use include an analysis that would place an upper limit on safeguards costs, but that the detailed cost-benefit analysis be postponed until some time subsequent to the decision on wide-scale use.

Of those comments specifically addressing the second issue (the matter of interim licensing), eighteen utilities, two vendors, one trade association, one state government agency, and one engineering firm did not believe that any restrictions on interim licensing were necessary. Thirty-two utilities, six envirionmental groups, eight vendors, three industry/trade associations, four state and local government agencies, two federal agencies, and five private citizens indicated that some related licensing actions should be taken in the interim, subject to certain restrictions and limitations. Comments from eight private citizens, one Congressman, one envirionmental group, and one county

government urged that no related licensing action be taken in the interim period.

Of those who specifically addressed the third issue (adequacy of present safeguards requirements), thirty utilities, fifteen vendors and processors, eight private citizens, two federal agencies, and one state government agency believed that present safeguards requirements were adequate for interim licensing; while eight private citizens, one Congressman, one envirionmental group and one county government believed that present regulations were inadequate for this purpose in the absence of further analysis. On the final issue (procedures for reaching the ultimate decision), while there was general agreement on the desirability and feasibility of a prompt decision on the widescale use of mixed oxide fuel, a wide variety of procedures were suggested for accomplishing this objective.

The comments received contributed greatly to the Commission's informed consideration of the issues involved.

Present Uses of Plutonium in the Light Water Reactor Fuel Cycle

Light water nuclear power reactors (LWRs) have characteristically been fueled with slightly enriched uranium, i.e., uranium in which the naturally occuring fissile isotope uranium-235 has been concentrated from its natural abundance of 0.7 percent to about 3 percent through a process called isotopic enrichment. Essentially all of the other 97 percent of the uranium in the fuel is the isotope uranium-238.

The heat energy produced during the operation of newly fueled light water reactors comes almost entirely from the fissioning of the uranium-235 atoms in the fuel. As the reactor operates, atoms of plutonium are produced from uranium-238 atoms. For each gram of uranium-235 consumed in LWR fuel, as much as 0.9 grams of fissile plutonium is formed within the fuel. Generally, more than

half of that plutonium subsequently fissions in place, thus contributing about one-third of the energy produced in the power plant. In fact, just before expended fuel is discharged from the reactor, more than half the fissions occuring in that fuel are fissions of plutonium rather than uranium. Thus, all operating uranium-fueled light water power reactors generate plutonium, some of which is consumed in the reactor without external recycle.

From the early days of the nuclear power industry in this country, electric utilities planning to construct and operate light water nuclear power reactors contemplated that the used, or spent fuel discharged from the reactors would be chemically reprocessed to recover the quantities of plutonium and uranium that escaped fission in the reactor, and that the plutonium and uranium so recovered would be recycled back into fresh reactor fuel. From 1957 until 1972 the AEC carried out an extensive program of spent fuel recycle research and development at a total cost of over one hundred million dollars. Direct support by AEC of this research terminated in mid-1972, although indirect support by the AEC continued through cooperative efforts with industry whereby AEC supplied plutonium at reduced cost for demonstration of mixed oxide fuel use.

Industry plans are to carry out the spent fuel recycle process in the following steps:

(1) Store the spent fuel to allow some decay of radioactivity;

(2) Separate plutonium and uranium from fission product wastes as nitrate solutions;

(3) Convert the uranium to uranium hexafluoride which is then enriched to increase the concentration of the fissile isotope uranium-235;

(4) Convert the uranium hexafluoride to uranium dioxide;

(5) Convert the plutonium nitrate to plutonium oxide;

(6) Manufacture fuel rods with pellets containing mixed plutonium and uranium oxides;

(7) Fabricate fuel elements containing fuel rods of mixed oxide fuel;

(8) Convert the fission product wastes into forms suitable for long term storage;

(9) Transport materials as required by the above processing, production, or storage operations.

The spent fuel which is the starting point of the overall recycle process produces highly penetrating radiation and thus is very hazardous to anyone exposed to it. Accordingly, the separations step, the second of the above steps, must be carried out behind massive shielding and with the use of remote operating technology. In the separations processes the fuel elements are sheared and the fuel materials dissolved prior to the separation of the constituents. After the plutonium and uranium nitrate solutions have been separated from the fission products and purified, the purified materials no longer contain the highly penetrating radiation which is inherent to the fission products. Thus, after the separations step, the plutonium and uranium products are significantly less radioactive.

The conversion of recovered uranium to uranium hexafluoride, subsequent isotopic enrichment and manufacture of low enriched uranium oxide fuel would be carried out in essentially the same type facilities and operations that are utilized when starting from naturally occurring uranium. The basic technology for conversion of plutonium nitrate to its oxide and for carrying out the manufacture of mixed oxide fuel has been developed in both government and industrial plutonium utilization programs. However, the capacity of the facilities presently licensed for this use and the quantities of material that have been handled to

date are of a magnitude far below that which would be involved in wide-scale use.

The conversion of limited quantities of fission product wastes into forms suitable for long term storage has been performed by a variety of methods in research and development programs. However, only small quantities of fission product wastes from commercial recycle of spent fuel have been generated to date and no commercial scale facilities for the conversion of such wastes have been designed or licensed to date.

Mixed oxide fuel and the materials involved in the fabrication of the fuel are being transported today and considerable experience exists with the factors involved in these transportation arrangements. Wide-scale use of mixed oxide fuel in light water reactors will require transport of larger amounts of commercial fuel materials in their various forms than are being transported today, but no other transportation factors of significance are introduced. To date fission product wastes have not been shipped to facilities for long term storage; thus, such shipment, while not judged to be markedly different from the shipment of spent fuel itself with regard to health and safety, environmental and safeguards considerations, has not been performed by industry.

At present, three light water nuclear power reactors (Big Rock Point in Michigan, Quad-Cities 1, and Dresden 1 in Illinois) are licensed to operate with mixed oxide fuel. The number of mixed oxide fuel rods in these reactors ranges from less than 0.1 percent in a commercial size (800 megawatts of electricity) reactor, Quad-Cities 1, to about eleven percent in a very small (70 megawatts of electricity) reactor, Big Rock Point.

There are in operation today no plants for reprocessing of light water reactor spent fuel or mixed oxide fabrication plants of the size contemplated for wide-scale use.

However, the Nuclear Fuel Services reprocessing plant at West Valley, New York, which is presently shut down, operated between 1966 and 1971, during which period this plant processed about 640 metric tons of spent fuel of which about one-half was uranium oxide fuel. Also, there are a number of small mixed oxide fuel fabrication plants in operation licensed to produce limited quantities of mixed oxide fuel. Their capacity is a small proportion of the capacity required to produce mixed oxide fuel for commercial reloads of the nation's existing light water reactors.

The Commission has pending before it several related licensing actions. One is Nuclear Fuel Services' application for a permit to construct alterations and expansions (Docket No. 50-201) at their existing plant. Allied General Nuclear Services' proposed separations and uranium conversion facilities in Barnwell, South Carolina, the construction of which began in 1970 and 1973, respectively, are nearing completion. The separations facility is the subject of a pending licensing proceeding before the Commission (Docket No. 50-332, together with a related matter, Docket No. 70-1729). Allied-General Nuclear Services also has filed an application for authority to construct and operate at its Barnwell site a facility for conversion of plutonium nitrate to plutonium oxide. In addition, an application by Westinghouse Electric Corporation for a license for a proposed mixed oxide fuel fabrication plant near Anderson, South Carolina, has been received and is undergoing review by the Commission's Staff. Other firms have expressed an interest in various plutonium recycle related activities, but have not filed any license applications.

General Policy Objectives of the Commission

In considering and arriving at its various determinations, the Commission was motivated by several basic policy objectives in carrying out its responsibilities under the Atomic Energy Act and NEPA. In keeping with its gen-

eral approach to regulatory matters, it sought to structure a decisional process which will assure thorough consideration of all salient factors and achieve this as expeditiously as practicable. It was the Commission's companion objective that this decisional process result in determinations that are sufficiently definitive and well-founded to allow firm planning by the nuclear industry. Further, the Commission was mindful of the need for sound guidelines to provide for such interim licensing as is compatible with the Commission's decisional course and consistent with the overall public interest.

Treatment of Safeguards in the Environmental Statement and Procedures for Decision

In light of its review of comments received in response to the May 8th Notice and its further deliberations, and consistent with the foregoing policy objectives, the Commission has concluded that a decision on wide-scale use of mixed oxide fuel in light water nuclear power reactors should be preceded by a full assessment of relevant safeguards issues. The Commission has also concluded that a cost-benefit analysis of alternative safeguards programs should be included as a part of the environmental impact statement on wide-scale use of mixed oxide fuel. It has directed its staff to prepare a cost-benefit analysis, including a recommendation as to the preferred requirements, in the form of a supplement to the draft statement previously circulated for comment. This supplement should be completed in early 1976, and will be circulated for comment.

The comments on the non-safeguards portions of the draft statement will be considered and that portion of the final statement will then be prepared and issued in early 1976. The remainder of the final environmental impact statement, which should be completed in mid-1976, will include a final safeguards cost-benefit analysis and an overall cost-benefit balance.

The public will continue to be afforded the opportunity to participate in the Commission's decision on wide-scale use, not only by submission of written comments on the supplement to the draft environmental statement, but also by the opportunity for participation in public hearings which will be held on both portions of the final environmental impact statement. The Commission intends that these hearings commence following issuance of the relevant portion of the final impact statement.

The Commission regards a decision-making process which is both sound and expeditious to be of crucial importance and believes that both considerations can be compatibly accommodated in its public hearing procedure. This accommodation will be fostered by legislative-type hearings on all relevant issues. The Commission will establish a board to preside at those hearings. The hearing board will be expected to establish reasonable time limits for the conduct of the proceedings. All direct testimony for the legislative-type hearings will be filed in advance. The board will be expected to question witnesses, and participants will be permitted to suggest questions to the board, but there will not be direct cross-examination of participants by other participants.

It may be that some factual issues cannot be resolved adequately on the basis of a record developed in this manner. Following completion of the legislative-type hearings, participants will have the opportunity to identify any such issues of fact for which direct cross-examination by the participants is needed for a sound decision. The participant requesting cross-examination on one or more such issues will be expected to demonstrate why the legislative-type procedures have not proved adequate. After consideration of any such requests and the views of the other participants thereon, the Commission will determine whether there is any need for further hearings, with opportunity for cross-examination, on specified issues. Following the

hearings, the board will certify the record to the Commission for use in its decision.

The procedures for hearing will be set forth in more detail in a Notice of Hearing which will be issued by the Commission in the near feature.

The Commission expects to publish proposed safeguards rules governing interim licensing of plutonium conversion and mixed oxide fuel fabrication activities when the supplement to the draft statement is issued. A written comment procedure will then be available. These interim requirements would be promulgated in final form when the last portion of the generic impact statement is issued in mid-1976.

In addition, the Commission intends to issue proposed amendments to its rules and regulations relating to the licensing of *wide-scale* use of mixed oxide fuels in notices of proposed rulemaking to be published in the FEDERAL REGISTER at about the time relevant portions of the impact statement are completed. These proposed amendments will address safety, environmental, and safeguards matters associated with wide-scale use of mixed oxide fuel.

In addition to the usual opportunity for written public comment on these rules, an opportunity will be afforded for consideration of them during the hearing process. The Commission intends to promulgate appropriate rules in final form at the time of its final decision.

INTERIM REVIEWS

Only a few light water nuclear power reactors in the United States use any mixed oxide fuel, domestic fuel fabricators produce little mixed oxide fuel on a commercial basis, and no domestic reprocessing of commercial light water power reactor spent fuel occurs at present. If the applicant's schedule were met and the Commission authorized its operation, the fuel separations and uranium con-

version facilities at the Barnwell plant (with estimated processing capacity of about 1500 metric tons of spent fuel per year) could start up in late 1976 to early 1977. The recovered uranium would then have to be chemically converted, reenriched and fabricated into fuel before it could be recycled back into light water power reactors. Allied-General Nuclear Services has filed an application containing preliminary design information for a plant at Barnwell in which plutonium nitrate would be converted to plutonium oxide. If authorization were granted by the Commission for construction and operation of the plant, it is unlikely that such conversion operations could commence any earlier than mid-1979.[3] The proposed modified and expanded NFS reprocessing plant, including plutonium and uranium conversion facilities (with estimated reprocessing capacity of about 750 metric tons of spent fuel per year) is still under design and, if authorized, is not expected to be in operation before about 1982. No construction has commenced on the proposed Westinghouse mixed oxide fabrication plant (200-400 metric tons of mixed oxide fuel per year) and it is not likely that the plant will, if authorized, be in operation before 1980. Other plutonium recycle related plants may be in the planning stage; but license applications for activities of this type have been filed only for the three plants noted above.

Given these practical limitations on the availibility of mixed oxide fuel in the United States before the early to mid-1980's—long after the Commission's decision will have been made—two limited questions are presented at this time for Commission consideration: first, whether and, if so, to what extent Staff reviews and public hearings regarding related license applications should be commenced or continued prior to the Commission decision on the wide-

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[3] Under 10 CFR § 71.42, after June 17, 1978, plutonium in excess of 20 curies per package must be shipped in a solid form (i.e., plutonium oxide rather than nitrate solution).

scale use of mixed oxide fuel; and second, whether the Commission should, in the exercise of its regulatory responsibilities, issue licenses or other approvals for fuel recycle activities in this interim period. These issues are treated in turn.

Staff Reviews and Public Hearings. Staff reviews of the various license applications described above are now in process. The Commission believes that these reviews should continue and that Staff reviews can also commence and continue with respect to any future fuel recycle related license applications that may be filed during the interim prior to the Commission decision on the wide-scale use of mixed oxide fuel. Any such applications must show compliance with detailed and stringent health and safety and environmental requirements, independent of generic issues regarding safeguards for the wide-scale use of mixed oxide fuel; and it would serve no useful purpose to delay consideration of these factors until after the ultimate decision. Continuation of Staff reviews in the interim would also serve to facilitate early identification of any significant problems, or areas in which plant design might be improved or additional data should be obtained.

It is recognized, of course, that Staff Safety Evaluations or Environmental Impact Statements may need to be supplemented in light of the Commission's final decision should that decision be favorable, but this is a matter that can be determined once that decision has been made.

The Commission also has carefully considered whether public proceedings should be commenced or continued short of license issuance for all related license applications in the interim period. The Commission has concluded that the considerations discussed above also are applicable to the initiation or continuation of formal public proceedings. However, in recognition of the fact that such proceedings entail commitments of resources by persons

other than the Commission's Staff, the Commission has decided that no rigid requirement for proceeding on all issues should be adopted. Rather, the Commission believes that any required formal public proceedings should be initiated, but that the individual Atomic Safety and Licensing Boards should decide, within the framework of the guidance set forth below, when evidentiary public hearings should be held and partial decisions rendered on specific issues. In making such decisions, the licensing boards should consider: (1) the degree of likelihood that any early findings on the issue(s) would retain their validity following the Commission's final decision on wide-scale use of mixed oxide fuel and implementing regulations; and (2) the possible effect on the public interest and the litigants in having an early, if not necessarily conclusive, resolution of the issue(s).

Interim Licensing

Aside from the issue of whether Staff reviews and public hearings should be continued, the Commission also considered the question of whether, in the exercise of its regulatory responsibilities, it should issue licenses or other approvals for limited fuel recycle activites in the interim period.

The Commission has concluded that interim licenses may be issued for fuel recycle related activities; eligibility for consideration of such licensing will depend on criteria which call for an analysis and balancing of specified factors. These criteria, which will be explained more fully below, deal with whether the activity can be justified from a NEPA cost-benefit standpoint without placing primary reliance on an anticipated favorable Commission decision on wide-scale use of mixed oxide fuel, whether the activity would unjustifiably foreclose substantial safeguards alternatives for the activity, and the effect of delay in the conduct of the activity on the overall public interest. The Commission also has con-

cluded that use of mixed oxide fuel in light water nuclear power reactors, which is in any event limited by practical constraints, may be permitted in the interim. For interim licensing of certain types of fuel cycle activities augmented safeguards requirements may be imposed as discussed below.

In reaching its general conclusion that individual interim licenses may be issued where warranted, and under the specific conditions discussed in this notice, the Commission assessed the likely benefits of allowing such interim licensing as well as the possible adverse impacts. Here, as in other decisional areas, the need for careful balance was evident. While the Commission is properly mindful that certain licensing actions have the potential for foreclosing subsequent alternatives, it cannot disregard the equally hard reality that inaction or a blanket prohibition on fuel recycle related licensing actions could also foreclose or substantially impede realization of energy alternatives which may contribute significantly to meeting national needs.

Protection of the Public Health and Safety, the Common Defense and Security and the Environment

The Commission believes that any public health and safety environmental issues associated with interim licensing can be addressed adequately under the Commission's regulations within the context of the reviews of the individual license applications. The Commission is of the view that interim licensing of a particular activity would not foreclose for that activity significant health and safety or environmental alternatives that may result from the final decision on wide-scale use of mixed oxide fuel. This confidence is based on the health and safety and environmental conclusions in the August 21, 1974 draft environmental impact statement, the Comments received thereon (including the comments of the Council on Environmental Quality),

and the comments received on the Commission's provisional views of May 8, 1975.[4]

The Commission is also of the view that, for the reasons given above and because of the limited number and type of plants involved, interim licensing of particular projects prior to completion of the generic environmental impact statement would not result in the overlooking of any cumulative health and safety or environmental impacts or in the foreclosure of alternatives to other projects that could only be addressed in the generic environmental statement.

For the same reasons the Commission believes that interim licensing is not likely to result in such a substantial further commitment of resources that the final decision on the costs and benefits of the public health and safety and environmental aspects of wide-scale use of mixed oxide fuel would be significantly affected or that generic determinations on such aspects would be foreclosed. The matter of foreclosure of safeguards alternatives is addressed below.

Overall Public Interest. Broad public interest conisderations must be weighed in determining the appropriateness of interim licensing. Whether the Commission decision on wide-scale use of mixed oxide fuel is favorable or unfavorable, an absolute prohibition on the conduct of any related activities in the interim could result in the disruption or cessation of planning as well as the production of useful data. Such a prohibition could result in potentially serious delays in exploring alternatives which could contribute to meeting the nation's energy needs. This could impose future economic penalties on the American public through increased costs to electric utilities caused by delaying the use of resources available in spent fuel and requiring additional

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[4] The so-called plutonium "hot particle" matter, which is the subject of a petition for rulemaking that is pending before the Commission, is expected to be resolved in the near future. Docket No. PRM 20-5.

spent fuel storage facilities that otherwise would not be needed.

The Commission, therefore, has concluded that it will be in the public interest to permit interim licensing under interim licensing eligibility criteria which are set forth below.

Foreclosure of Safeguards Alternatives. In view of the limited number of fuel recycle related license applications, the Commission believes that any interim licensing is highly unlikely to result in such a substantial further commitment of resources that the decision on the costs and benefits of safeguards measures appropriate for widescale use of mixed oxide fuel would be significantly affected or that generic safeguards determinations would be foreclosed. It is recognized that interim licensing of a particular project could, depending on the circumstances, have a tendency to foreclose the later adoption of safeguards alternatives to the particular project. Of course, where substantial commitments of resources have already been made to a particular project, additional commitments to the project are far less likely to have this result. With respect to the use of mixed oxide fuel in reactors, it is not likely that significant design changes would be required to accommodate loading of mixed oxide fuel, and the fuel can always be removed and the reactor refueled with uranium fuel. Thus, authorization for use of mixed oxide fuel in light water power reactors in the interim is not likely to foreclose safeguards alternatives significantly. The interim licensing criteria reflect these considerations as well.

Any related licenses that may be issued by the Commission in the interim prior to the final decision on the widescale use of mixed oxide fuel must also include adequate measures to protect against loss or diversion of the quantities of plutonium that may be involved. These interim safeguards requirements are discussed later in this notice.

Dependency on Wide-Scale Use. Potentially significant benefits associated with interim licensing include the pro-

duction of useful additional economic and technical data regarding the operation of reprocessing facilities and other fuel cycle plants and the operation of reactors with mixed oxide, the value of the fuel that could be recovered in reprocessing and recycled into fresh reactor fuel, and amelioration of a possible shortage of spent fuel storage capacity.

Major Commission actions, such as licensing the operation of commercial fuel reprocessing facilities or operation of fuel element fabrication plants, require preparation of an environmental impact statement under NEPA. Such an impact statement would set forth a conclusion whether the environmental costs that are associated with the project are justified in light of the benefits. The benefits described above could, depending on the circumstances of the case, be sufficient under NEPA to offset the environmental costs of a particular project. However, it is possible that some projects may be so integrally related to the wide-scale use of mixed oxide fuel that the environmental costs associated with the project could only be justified by assuming that wide-scale use of mixed oxide fuel will take place. In the Commission's view, the degree of dependency of a particular project on a favorable decision on the wide-scale use of mixed oxide fuel should be assessed along with other relevant considerations, in determining whether any interim license for the projects should be issued.

Interim Licensing Eligibility Criteria

The Commission has determined that whether specific fuel recycle related activities (as defined below) should be authorized in the interim will be determined within the context of the individual licensing proceedings on the basis of consideration and balancing of the following factors:

(1) Whether the activity can be justified, from a NEPA cost-benefit standpoint, without placing primary reliance on

an anticipated favorable Commission decision on wide-scale use of mixed oxide fuel;

(2) Whether the activity would give rise to an irreversible and irretrievable commitment of resources that would unjustifiably foreclose for the activity substantial safeguards alternatives that may result from the decision on wide-scale use; and

(3) The effect of delay in the conduct of the activity on overall public interest.

These criteria will be applied to all applications for licenses or permits or amendments thereto for fuel recycle related activities (other than reactor construction and operation), such as commercial nuclear fuel reprocessing and mixed oxide fuel fabrication, and all regular actions that would have the effect of permitting commencement of construction of any such light water nuclear power fuel cycle plants.[5]

Operating licenses and amendments to operating licenses may be issued authorizing use of mixed oxide fuel in light water nuclear power reactors without case-by-case application of the eligibility criteria for fuel cycle activities described above. The Commission believes that this use of mixed oxide fuel in the interim could produce useful additional economic and technical data. This concept was re-

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[5] Under the Commission's regulations, applicants for licenses to conduct activities involving use of nuclear materials subject to section 102(2)(C) of NEPA (such as plutonium fuel fabrication) may commence construction of the plant within which the activities are to be conducted upon issuance of the final Staff environmental impact statement and Commission approval of the design bases and quality assurance program for principal structures, systems, and components of the plant. (10 CFR § 70.23(a)(7) and 70.23(b)). The Commission believes that commencement of construction of any such related plants should be subject to the same interim licensing eligibility criteria as apply to those fuel cycle facilities which require issuance of construction permits.

flected in the Commission's provisional views as set forth in the May 8th Notice, which favored permitting continued use of mixed oxide fuel in reactors for experimental purposes. Significant design changes in light water reactors will not be required for likely uses of mixed oxide fuel elements, which can readily be replaced with uranium fuel should circumstances require. As noted previously, all operating uranium-fueled light water power reactors generate plutonium, some of which is consumed in the reactor without external recycle. In the interest of obtaining a broader data base, no limits will be placed on the number of light water reactors for which such authorizations may be granted. The Commission is mindful, however, that the use of mixed oxide fuel in reactors during the interim will necessarily fall far short of wide-scale use, because of the limited mixed oxide fuel fabrication capacity that will be available. The Commission expects to make its decision on wide-scale use well before this situation could significantly change.

Applications for export or import of mixed oxide fuels, or for import of plutonium for domestic or re-export use in mixed oxide fuels, will be similarly constrained during the interim period by the absence of facilities here or abroad capable of processing and fabricating mixed oxide fuels at levels approaching wide-scale use. Accordingly, here too, no special measures are now required.

Interim Licensing Safeguards

As is the case with all licenses issued by the Commission, any interim license that may be issued for nuclear power reactor fuel cycle activities will be subject (by regulation or order) to possible additional safeguards requirements. All interim activities that may be authorized pursuant to the above eligibility criteria will be conducted at the risk of the applicant, and be expressly subject to amendment, suspension, or revocation in light of the Commission decision on wide-scale use of mixed oxide fuel.

The Commission's program for safeguarding nuclear facilities and materials involves continual review and regulatory improvements. Current safeguards regulations are set forth in 10 CFR Parts 70 and 73. The regulations in Part 70 provide for material accounting and control requirements with respect to facility organization, material control arrangements, accountability measurements, statistical controls, inventory methods, shipping and receiving procedures, material storage practices, records and reports, and management control.

The Commission's current regulations in 10 CFR Part 73 provide requirements for the physical security and protection of fixed sites and transportation involving strategic quantities of nuclear materials. Physical security requirements for protecting fixed sites include the establishment and training of a security organization (including armed guards), provision of physical barriers, establishment of access controls, use of intrusion alarms, arrangements for communication with response forces, and establishment of response plans.

The Commission has also published a notice in the FEDERAL REGISTER that it is considering strengthening its regulations in 10 CFR Part 70 by providing for explicit limits for material balance uncertainty and by setting forth requirements for prompt action when an excessive material balance uncertainty occurs (40 FR 30133). The Commission has further proposed amendments to its regulations in 10 CFR Part 73 which would provide for an increased level of physical protection for shipments by licensees of special nuclear material of high strategic value (39 FR 40036), would identify particular measures to be taken for the protection of nuclear power reactors against industrial sabotage (39 FR 40038), and would require advance notice to the Commission of shipments involving certain quantities of special nuclear material and notification of arrival of such shipments at their final destinations (40 FR 15098).

The next major milestones in this process of review and improvement in safeguards are expected to be the completion of the Federal Security Agency Study mandated by section 204(b)(2)(C) of the Energy Reorganization Act of 1974, the completion of the Nuclear Energy Center Site Survey mandated by section 207 of the same Act, and the issuance of the draft safeguards supplement to the environmental impact statement.

The Commission's regulations in 10 CFR Parts 70 and 73 described briefly above are applied in the reviews of individual license and permit applications. License conditions then are developed and imposed which translate the regulations into specific requirements and limitations which are tailored to fit the particular type of plant or facility involved.

With regard to existing licensed activities, while experience and continuing study may indicate areas where revisions in its regulations should be made, the Commission is confident that, in light of the types and numbers of facilities and amounts of materials involved, the above-described safeguards framework is adequate to enable the Commission to cary out its responsibilities to protect the public health and safety and the common defense and security.

The Commission is of the same view as regards the interim use of mixed oxide fuel in light water power reactors, and the associated transportation of reactor fuel. The Commission believes that those activities, so regulated, impose little or no increase in current levels of risk associated with loss or diversion of plutonium. Once irradiation has begun in the reactor, mixed oxide fuel elements present no considerations different from uranium elements—which, as already indicated, immediately begin to generate and use plutonium once loaded in the reactor core. Before that point, the plutonium in the fresh fuel element is highly dilute and dispersed, and encased within metal fuel rods. Shipments are made in heavy assemblies, and recovery of

the plutonium would involve a complex and multi-stage chemical process.

The Commission is confident that the safeguards framework of existing and proposed regulations provides an adequate basis for interim licensing of initial processing of spent fuel to separate its uranium and plutonium constituents, of conversion of the uranium constituent to uranium hexafluoride, and of the transportation links associated with these activities. The nuclear materials in a separation plant, until the very final processing stages, are in a chemical and physical form, and behind a containment, which make theft or diversion both difficult and personally hazardous, since they remain highly radioactive at these stages. Even at the final stages of the process, the fissile components are not in a form suitable for fabrication of nuclear explosives. Moreover, current regulations provide adequate bases for security of these types of plants. Reprocessing plants are designed and constructed with heavy barriers which limit access to special nuclear material and thus it is unlikely that major adjustments in protection for such plants will be required following the Commission's decision on wide-scale use. Finally, while material control and accounting problems will be introduced with regard to the plutonium inventory in the separation plants, acceptable levels of accountability can be accomplished under present regulations by strengthening plant-specific material balance controls.

The Commission is of the further view that licensing of applications for plutonium conversion and mixed oxide fuel fabrication, and the associated transportation links, should await requirements which can best be established in light of the comprehensive evaluation of safeguards in the supplement to the environmental impact statement. While it appears, on the basis of experience to date and information derived from the ongoing safeguards studies, that reasonable and adequate safeguards measures can be developed

for the interim licensing of these activities, the Commission has decided that the particular safeguards regulations for such activities should await completion of the additional studies. The regulations thereafter established, in the manner set forth below, will serve as the basis for licensing reviews and for such licensing decisions on facilities of this type as may take place during the interim period.

The particular safeguards regulations for the foregoing will be the subject of detailed discussion in a notice that will be published in the FEDERAL REGISTER at about the same time as issuance of the draft safeguards supplement to the environmental impact statement (early 1976).

Promulgation of any additional regulations for interim use will take place only after public procedure in accordance with section 553 of title 5 of the United States Code, and receipt and analysis of comments on the draft supplement. The final determination on such regulations will be made by the Commission at about the same time (mid-1976) as issuance of the final portion of the environmental impact statement, which will include the final cost-benefit analysis. These particular safeguards regulations for licensing of plutonium conversion and mixed oxide fuel fabrication would be interim in nature, would apply only to reviews of and decisions on applications for licenses for such facilities during the limited time preceeding a Commission decision on wide-scale use and the requirements appropriate thereto, and would be subject to modification in light of the final Commission decision on those matters. As reflected by the earlier-recited status of facility applications before NRC, any licensing that may be authorized prior to the final Commission decision would be limited, as a practical matter to a few plants. The interim licensing eligibility criteria are designed to assure consideration of both the justification for such licensing, and whether the activity under review would unjustifiably foreclose for the activity sub-

stantial safeguards alternatives that may result from the Commission's final decision on widescale use of mixed oxide fuel.

These eligibility criteria and safeguards limitations are in addition to any other applicable Commission licensing requirements set forth in the Commission's regulations. In particular, the Commission expects that individual environmental impact statements or appraisals, as appropriate, would be prepared for fuel recycle related licensing actions subject to the eligibility criteria. The individual impact statement or appraisal would describe the relationship between the licensing action at issue and the environmental impact statement on wide-scale use, and discuss the application of the criteria to the facts of the case.

The Commission believes that the determinations herein are responsive to the need for sound and timely regulatory decisions. The comments received in response to the May 8th FEDERAL REGISTER notice served to provide a constructive focus on the complex issues requiring resolution and contributed greatly to the Commission's informed consideration of those issues.

Dated at Washington, D.C. this 11th day of November, 1975.

For the Nuclear Regulatory Commission.

SAMUEL J. CHILK,
Secretary of the Commission.

Appendix

Projected Schedule of Events Leading to Commission Decision on Wide-Scale Use of Mixed Oxide Fuel.

Late 1975—Notice of hearing on issues associated with health and safety, safeguards, and environmental matters arising from wide-scale use of mixed oxide fuel in light water reactors.

Early 1976—Publish proposed environmental and health and safety rules regarding wide-scale use;

Issue draft cost-benefit analysis of alternative safeguards programs as a supplement to the Generic Environmental Statement on Mixed Oxide Fuel;

Publish proposed safeguards rules for interim licensing of plutonium conversion and mixed oxide fuel fabrication activities;

Issue portion of final environmental statement dealing with health and safety and environmental matters.

Mid-1976—Issue final safeguards rules for interim licensing of plutonium conversion and mixed oxide fuel fabrication;

Issue final safeguards supplement and overall cost-benefit analysis to complete the final environmental statement;

Publish proposed safeguards rules regarding wide-scale use of mixed oxide fuel.

Early 1977—Earliest possible decision on wide-scale use and publication of final rules for wide-scale use of mixed oxide fuel.[1]

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[1] Legislative-type hearings will begin as soon as practicable after issuance of the partial final environmental statement on health and safety and environmental matters. Assuming adjudicatory hearings are not required a Commission decision on wide-scale use of recycled plutonium could be reached by early 1977. The Commission cannot say at this time whether adjudicatory-type hearings will be in order, or how long they will take if held—their actual duration being dependent on the number and complexity of the issues determined by the Commission as needing adjudicatory treatment.

APPENDIX B

UNITED STATES COURT OF APPEALS,
SECOND CIRCUIT.

Nos. 963, 1051, Dockets 75-4276, 75-4278.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.,
Petitioners,

v.

THE UNITED STATES NUCLEAR REGULATORY COMMISSION and THE UNITED STATES OF AMERICA, *Respondents,*

ALLIED GENERAL NUCLEAR SERVICES, ET AL., *Intervenors.*

Argued April 12, 1976.

Decided May 26, 1976.

As Amended Aug. 12, 1976.

Anthony Z. Roisman, Washington, D. C. (Roisman, Kesler & Cashdan, Washington, D. C., of counsel), and J. Gustave Speth, Washington, D. C., for petitioners Natural Resources Defense Council, Inc., and others.

Louis J. Lefkowitz, Atty. Gen. of the State of New York, New York City (Samuel A. Hirshowitz, First Asst. Atty. Gen., Philip Weinberg, John F. Shea, III, and Richard G. Berger, Asst. Attys. Gen., New York City, of counsel), for petitioner the State of New York.

Peter L. Strauss, Gen. Counsel, Nuclear Regulatory Commission, Washington, D. C. (Stephen F. Eilperin, Asst. Gen. Counsel, Steven P. Goldberg, Atty., Nuclear Regulatory Commission, and Peter R. Taft, Asst. Atty. Gen., and Edmund B. Clark, Atty., U. S. Dept. of Justice, Washington, D. C.), for respondents.

Bennett Boskey, Volpe, Boskey & Lyons, Washington, D. C., for intervenors Allied-General Nuclear Services, and others.

George C. Freeman, Jr., Donald P. Irwin, and James N. Christman, Richmond, Va. (Hunton, Williams, Gay & Gibson, Richmond, Va., and Alvin G. Kalmanson, New York City, of counsel), Henry V. Nickel, Michael B. Barr, Washington, D. C. (LeBoeuf, Lamb, Leiby & MacRae, and Arvin E. Upton, Washington, D. C., of counsel), for intervenors Baltimore Gas & Electric Co., and others, Commonwealth Edison Co., and others, and The Babcock and Wilcox Co.

Robert Lowenstein, Washington, D. C. (Lowenstein, Newman, Reis & Axelrad, Maurice Axelrad, Michael A. Bauser and Linda L. Hodge, Washington, D. C., of counsel), for intervenor Nuclear Fuel Services, Inc.

Milton Waxenfeld, New York City (Weisman, Celler, Spett, Modlin, Wertheimer & Schlesinger, New York City, and Elliot S. Katz, Pittsburgh, Pa., of counsel), for intervenor Westinghouse Electric Corp.

Before CLARK, *Associate Justice,* and PIERCE and OWEN, *District Judges.**

PIERCE, *District Judge:*

Petitioners Natural Resources Defense Council, Inc., five other environmental groups, and the State of New York seek review of an order of the respondent, the United States Nuclear Regulatory Commission, dated November 11, 1975 and published at 40 Fed.Reg. 53056 on November 14, 1975. The order below sets forth procedures and schedules which the Commission will follow for the completion of its generic environmental impact statement on uranium and plutonium mixed oxide fuel ("GESMO") and for the conduct of associated hearings. The order also sets forth criteria under which the Commission will proceed to grant interim licenses for commercial utilization of mixed oxide

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* Tom C. Clark, Associate Justice, United States Supreme Court, Retired, Lawrence W. Pierce, and Richard Owen, United States District Judges for the Southern District of New York, sitting by designation.

fuel related activities during the period prior to the completion of the GESMO study and the Commission's final decision on wide-scale use of mixed oxide fuel in light water nuclear power reactors.[1] The November 11, 1975 order is the result of comments solicited by the Commission in response to a prior Notice on the subject of mixed oxide fuel, published at 40 Fed.Reg. 20142 (May 8, 1975). Petitioners seek review in this Court pursuant to 28 U.S.C. § 2342(4) and 42 U.S.C. § 2239.[2]

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[1] See 40 Fed.Reg. at 53056-57. "GESMO" is the Commission's acronym for its generic environmental statement on mixed oxide fuel. GESMO differs from a standard environmental impact statement in that it addresses the generic or overall considerations of the undertaking rather than analyzing only the isolated impact of the undertaking on one given area. As used herein, "Draft GESMO" is the preliminary report issued August 21, 1974, "Final GESMO" is the completed version of that report to be issued in 1976, and the "GESMO supplement" or the "safeguards supplement" is a complementary study of questions relating to possible sabotage, theft and diversion of plutonium, undertaken by the Commission in response to the request of the Council on Environmental Quality. Neither the Final GESMO nor the GESMO supplement have yet been issued.

[2] 28 U.S.C. § 2342 provides in part as follows:

> "The court of appeals has exclusive jurisdiction to enjoin, set aside, suspend (in whole or in part), or to determine the validity of—
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> • • • • • •
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> "(4) all final orders of the Atomic Energy Commission made reviewable by section 2239 of title 42 . . . ."

42 U.S.C. § 2239 provides as follows:

> "(a) In any proceeding under this chapter, for the granting, suspending, revoking, or amending of any license or construction permit, or application to transfer control, and in any proceeding for the issuance or modification of rules and regulations dealing with the activities of licensees, and in any proceeding for the payment of compensation, an award or royalties under sections 2183, 2187, 2236(c) or 2238 of this title, the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding, and

Petitioners ask this Court to set aside the Commission's November 11, 1975 order on the ground that the decision to allow interim licensing of the use of plutonium in light water reactors and interim licensing of related nuclear fuel recycle activities prior to the completion of the GESMO study, and prior to a final decision thereon, is in violation of the National Environmental Policy Act of 1969 ("NEPA"), 42 U.S.C. §§ 4321 et seq.,[3] the Atomic Energy

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shall admit any such person as a party to such proceeding. The Commission shall hold a hearing after thirty days' notice and publication once in the Federal Register, on each application under section 2133 or 2134(b) of this title for a construction permit for a facility, and on any application under section 2134(c) of this title for a construction permit for a testing facility. In cases where such a construction permit has been issued following the holding of such a hearing, the Commission may, in the absence of a request therefor by any person whose interest may be affected, issue an operating license or an amendment to a construction permit or an amendment to an operating license without a hearing, but upon thirty days' notice and publication once in the Federal Register of its intent to do so. The Commission may dispense with such thirty days' notice and publication with respect to any application for an amendment to a construction permit or an amendment to an operating license upon a determination by the Commission that the amendment involves no significant hazards consideration.

(b) Any final order entered in any proceeding of the kind specified in subsection (a) of this section shall be subject to judicial review in the manner prescribed in the Act of December 29, 1950, as amended, and to the provisions of section 10 of the Administrative Procedure Act, as amended."

[3] 42 U.S.C. § 4332 provides in part as follows:

"The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, and (2) all agencies of the Federal Government shall—

"(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment;

"(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality estab-

Act, 42 U.S.C. §§ 2201 et seq. and the Energy Reorganization Act of 1974, 42 U.S.C. §§ 5841 et seq. Petitioners also claim that the order violates NEPA by bifurcating the ongoing environmental review, by providing that the final impact statement will be issued in two parts at different times, and by setting forth procedures whereby the environmental issues will be addressed in hearings which are

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lished by subchapter II of this chapter, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

"(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment; a detailed statement by the responsible official on—

"(i) the environmental impact of the proposed action,

"(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

"(iii) alternatives to the proposed action,

"(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

"(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

"Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of Title 5, and shall accompany the proposal through the existing agency review processes;

• • • • • •

"(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;"

to be primarily legislative rather than adjudicatory in character. The Commission urges that the order under review is not a "final order" within the meaning of 28 U.S.C. § 2342 and 42 U.S.C. § 2239, that the decision to allow interim licensing does not violate NEPA or the energy acts, and that its pronouncements concerning procedures and schedules are matters within its discretion. The intervenors, representatives of the nuclear power industry, similarly argue that the order is not "final" and that it does not violate NEPA.

We agree with petitioners that the order below is final and reviewable in this Court. We agree with the Commission that the procedures and schedules set forth in the order are matters within its discretion. However, we find that the portion of the order which allows the Commission to proceed to grant interim commercial licenses for the use of mixed oxide fuel and related activities prior to the completion of the GESMO study and the final decision on wide-scale use would allow the commencement of major federal action without the benefit of an adequate environmental impact statement. Accordingly, we conclude that the decision to proceed to interim licensing is in violation of the NEPA, and that portion of the order is reversed and remanded.

I. *The Plutonium Recycle*

The vast majority of nuclear power plants presently in operation in this Nation are fueled by fissionable uranium. These reactors start with uranium-235, and through the fission process, release large amounts of energy which is used to generate electrical power. The uranium fission process produces large quantities of radioactive waste material, or "spent fuel". Because of the growing quantity of nuclear wastes and because of the fact that natural resources of uranium are limited, the federal government, in conjunction with private industry, has since 1957 investigated the potential of recycling spent fuel in order to

produce a new source of nuclear energy. The Commission estimates that the cost of this research to the government alone has been in excess of 100 million dollars.

As a light water nuclear reactor operates, heat is generated from the fissioning of uranium-235 atoms in the fuel. The fission process also creates atoms of plutonium from uranium-238 atoms. For each gram of U-235 fuel consumed in the reactor, as much as 0.9 grams of fissile plutonium is formed within the fuel. Generally, more than half of the plutonium so produced is consumed in the reactor process without any external recycle, before the discharge of the spent fuel. Accordingly, all present light water nuclear reactors to some extent generate and use plutonium as fuel.

The spent fuel which remains after the completion of the fission process contains elements of uranium and plutonium which, if properly separated from the waste, reprocessed, and fabricated into new nuclear fuel, would constitute a significant new source of energy. Cognizant of the nation's pressing need for new sources of energy, as well as of NEPA's mandate that natural resources be recycled so as to preserve depletable sources of energy, see 42 U.S.C. § 4331(b)(6), the Commission has undertaken a broad-scale inquiry into the commercial feasibility of plutonium recycle. According to the Commission, the nuclear power industry plans to carry out the spent fuel recycle process in a series of nine steps.[4]

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[4] "Industry plans are to carry out the spent fuel recycle process in the following steps:

(1) Store the spent fuel to allow some decay of radioactivity;

(2) Separate plutonium and uranium from fission product wastes as nitrate solutions;

(3) Convert the uranium to uranium hexafloride which is then enriched to increase the concentration of the fissile isotope uranium-235;

(4) Convert the uranium hexafloride to uranium dioxide;

(5) Convert the plutonium nitrate to plutonium oxide;

The first step in the recycle is to store the spent fuel to allow for some decay of radioactivity. Certain existing nuclear plants have facilities for such storage, but the Commission reports that developing forms suitable for long-term storage of fuel wastes are presently only experimental.

Once some radioactive decay has been accomplished, the plutonium and uranium elements of the spent fuel are separated out as nitrate solutions. This step of the recycle chain must be carried out through the use of remote operating technology behind massive protective shielding. However, once the separation has been accomplished, the purified materials no longer contain the highly penetrating radiation which is present in fission products. Following separation, the uranium nitrate is converted into uranium hexafloride which is in turn enriched to increase the concentration of uranium-235. The enriched uranium hexafloride is then converted to uranium dioxide. Similarly, the plutonium nitrate is converted to plutonium oxide. The resulting materials are fabricated into fuel rods containing mixed plutonium and uranium oxides; hence the term "mixed oxide fuel".

The mixed oxide fuel rods then are fabricated into fuel elements for insertion into light water nuclear reactors converted from use of uranium to use of mixed oxide fuel. The fission wastes remaining after the separation and reprocessing must be converted to a form suitable for long-

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(6) Manufacture fuel rods with pellets containing mixed plutonium and uranium oxides;

(7) Fabricate fuel elements containing fuel rods of mixed oxide fuel;

(8) Convert the fission product wastes into forms suitable for long term storage;

(9) Transport materials as required by the above processing, production, or storage operations."

(40 Fed. Reg. at 53059)

term storage. The various steps of the recycle must be achieved through transportation of the nuclear materials from light water reactors to separation and conversion facilities, to fabrication plants and back to the converted light water reactors.[5]

Three light water nuclear power reactors are presently licensed to operate with limited amounts of mixed oxide fuel. The amount of mixed oxide fuel employed ranges from less than 0.1 percent of the total fuel core in the commercial scale reactor at Quad-Cities 1, Illinois, to approximately eleven percent in the very small reactor at Big Rock Point in Michigan. Between 1966 and 1971, the Nuclear Fuel Services plant at West Valley, New York, performed separation and reprocessing of spent fuel, processing approximately 640 metric tons of spent fuel. However, that plant is presently shut down. A few presently operating plants produce very limited amounts of mixed oxide fuel; the quantity involved is but a small proportion of that which would be utilized through wide-scale use.

Presently pending before the Commission are a number of applications to undertake different steps of the plutonium recycle process. Nuclear Fuel Services has applied for permission to alter and expand its existing plant; Allied-General Nuclear Services seeks licensing of proposed separations and uranium conversion facilities presently under construction at Barnwell, South Carolina; and Westinghouse Electric Corporation has applied for a license to undertake mixed oxide fuel fabrication at a proposed plant near Anderson, South Carolina.[6] Other firms have ex-

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[5] The Energy Reorganization Act of 1974 requires, *inter alia*, that the Commission evaluate and compare the respective environmental impact of separate versus grouped siting of nuclear fuel recycle facilities; see 42 U.S.C. § 5847. However, even if such facilities were grouped, transportation of plutonium would be required to converted facilities and for storage purposes.

[6] See Nuclear Regulatory Commission Docket Nos. 50-201, 50-332, and 70-1729; 40 Fed.Reg. at 53059.

pressed interest in undertaking plutonium related activities.

II. *Prior Proceedings*

As the nuclear power industry proceeds with plans for the implementation of the plutonium recycle, environmental concerns are properly addressed by the licensing agency. Cognizant of its responsibilities, the Commission's predecessor, the Atomic Energy Commission, announced on February 12, 1974, that a generic environmental impact statement (GESMO) would be prepared prior to a Commission decision on the wide-scale use of mixed oxide fuel; see 39 Fed.Reg. 5356.

GESMO is intended to be a comprehensive NEPA evaluation of mixed oxide fuel examining such essential issues as nation-wide environmental impact, adverse environmental effects, safeguards against adverse effects and alternatives to the proposed recycle activities. On August 21, 1974, GESMO was issued in draft form, and the draft circulated among the various interested agencies of the federal government. Draft GESMO concluded that the Commission should proceed to license wide-scale use of mixed oxide fuel, that environmental considerations would not be adversely effected, and that the use of plutonium recycle would serve not only to lessen the demand on limited reserves of uranium but would also present a partial solution to the problems of radioactive wastes. Draft GESMO, issued in four volumes and in excess of six hundred pages, can be described as a massive scientific inquiry into the question of plutonium recycle. Draft GESMO analyzes the background of scientific experience with plutonium and projects a wide-scale plutonium recycle industry by the year 1990. The study analyzes the expected environmental impact of the use of mixed oxide fuel in light water reactors, of the fabrication of mixed oxide fuel, of reprocessing facilities and of the supporting uranium fuel cycle.

A significant section is devoted to the transportation of radioactive materials and to the problems of radioactive waste management and storage of plutonium. Draft GESMO also undertook to evaluate the effects of radiation on public health and to describe possible fuel and plant protection. Two chapters of the study are devoted to probable adverse environmental effects which cannot be avoided and to methods to limit such effects. Draft GESMO investigated alternative dispositions of plutonium, including storage, immediate use, and a permanent ban on use, presenting a cost-benefit analysis of each alternative disposition.

Despite this herculean undertaking, it is immediately apparent that Draft GESMO did not fully address alternatives to the plutonium recycle industry. There is no significant discussion of any methods of energy production other than nuclear. Further, Draft GESMO did not reach any final conclusions on the question of safeguards. At the time of Draft GESMO's release, the Commission planned to issue a supplemental statement on safeguards.[7]

On January 20, 1975, the President's Council on Environmental Quality ("CEQ"), by letter, informed the Commission that in its opinion Draft GESMO was inadequate, particularly since it failed to address adequately the special dangers of sabotage and theft posed by large-scale transportation of plutonium materials. The CEQ recommended that these special problems be addressed before any final decision on wide-scale use. Further, the CEQ directed the Commission to avoid taking any licensing steps in the interim period which could result in the foreclosure of alternative safeguards or which could result in unnecessary "grandfathering" of existing facilities' safeguards systems.

Looking toward compliance, the Commission on May 8, 1975 announced provisional decisions on certain procedures

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[7] See 40 Fed.Reg. at 53058.

which it would employ in the ongoing inquiry into plutonium related activities. The Commission invited public comment on its provisional decisions regarding licensing policy, which were as follows:

> "(1) A cost-benefit analysis of alternative safeguards programs should be prepared and set forth in draft and final environmental statements before a Commission decision is reached on wide-scale use of mixed oxide fuels in light water nuclear power reactors.
>
> "(2) *There should be no additional licenses granted for use of mixed oxide fuel in light water nuclear power reactors in the interim prior to the decision on wide-scale use except for experimental purposes;* and
>
> "(3) With respect to light water nuclear power reactor fuel cycle activities (activities other than nuclear power reactor construction and operation) which depend for their justification on wide-scale use of mixed oxide fuel in light water nuclear reactors, *there should be no additional licenses granted in the interim which would foreclose future safeguards options or result in unnecessary 'grandfathering'.* This would not preclude the granting of licenses in the interim for experimental and-or technical feasibility purposes." (40 Fed.Reg. at 20142, as quoted at 40 Fed.Reg. at 53058) (Emphasis supplied.)

In response to its invitation in this May 8, 1975 Notice, the Commission received in excess of two hundred comments and inquiries from government agencies, public officials, environmental groups, industry spokesmen, and private individuals. By letter, the Environmental Protection Agency supported the proposed total ban on commercial licensing until after a final decision implementing an adequate safeguards program. (See Jnt.App. at 237). The Federal Energy Administration recommended that the

Commission license only facilities for "commercial demonstration purposes" in the interim period, or that the Commission bar only fuel fabrication and plant use. (See *Id.* at 182.)

Comments received from the nuclear power industry recommended generally that the Commission proceed to interim licensing of certain restricted activities prior to the final decision on GESMO. Consumers Power Company, a licensee of two plants, stated that a delay of plutonium licensing until 1978 would cost it six million dollars in additional outlays for enriched uranium and would cost the entire nuclear industry some thirty-five to fifty million dollars for spent fuel storage. (See Jnt.App. at 209.) Despite the industry's apparent desire to proceed with plutonium activities, a number of firms expressed concern over the problems of plutonium transportation. For example, Northeast Nuclear Energy Co. urged that military guards be provided for the recycle process and particularly for the transportation step. (See Jnt.App. at 207.) General Atomic Company stated that "transportation is the weakest link of any safeguards chain" and set forth reasons why the transportation of plutonium posed greater hazards than the transportation of highly enriched uranium. (See Jnt. App. at 219.)

III. *The November 11, 1975 Decision*

Following receipt of comments and limited hearings held during the comments period, the Commission issued the November 11, 1975 order which is now under review. In essence, through that decision the Commission reversed its earlier position of May 8, 1975 and concluded that certain interim commercial licensing *should* be allowed. The order also set forth procedures for hearings on the final version of the GESMO study to be issued in 1976 and for hearings on the safeguards supplement to GESMO also presently being prepared.

The procedures set forth were geared to the Commission's estimate that it would issue Final GESMO in "early 1976" and the safeguards supplement in "mid-1976." The Commission had also estimated that it could conclude the GESMO hearings by the end of 1976. However, at argument, counsel for the Commission stated that there had been "some slippage" in this time schedule.

The November 11, 1975 order provides that the Commission will proceed to hold hearings on the GESMO study in the following manner once each segment of the study is released in its final form:

> "The Commission will establish a board to preside at those hearings. The hearing board will be expected to establish reasonable time limits for the conduct of the proceedings. All direct testimony for the legislative-type hearings will be filed in advance. The board will be expected to question witnesses and participants will be permitted to suggest questions to the board, but there will not be direct cross-examination of participants by other participants.
>
> "It may be that some factual issues cannot be resolved adequately on the basis of a record developed in this manner. [After the legislative-type hearings,] participants will have the opportunity to identify any such issues of fact for which direct cross-examination by the participants is needed for a sound decision. [The participant] will be expected to demonstrate why the legislative-type procedures have not proved adequate." (40 Fed.Reg. at 53060.)

The November 11, 1975, order also addressed the question of the extent to which the Commission should undertake review of individual license applications prior to the GESMO hearings and the final decision on mixed oxide fuel. The Commission determined that its staff should con-

tinue to review applications but that the staff should analyze only those questions not being addressed in GESMO. The staff reviews will be supplemented thereafter following the final decision on wide-scale use.

Public hearings on pending license applications will be conducted only in the Commission's discretion, upon a consideration of the following factors:

> "(1) the degree of likelihood that any early findings on the issue(s) would retain their validity following the Commission's final decision on wide-scale use of mixed oxide fuel and implementing regulations; and
>
> "(2) the possible effect upon the public interest and the litigants in having an early, if not necessarily conclusive, resolution of the issue(s)." (40 Fed.Reg. at 53061.)

Such hearings, if held, would be adjudicatory in character as are the Commission's licensing proceedings in most cases. Further, each licensing proceeding will provide its own local environmental impact statement; *however, the Commission in one case has ruled that those statements need not address the environmental issues being treated in the GESMO study.*[8]

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[8] See 40 Fed.Reg. at 53060-63. This position was set forth clearly by the Commission's decision *In the Matter of Consumers Power Company* (Big Rock Point Nuclear Plant) Docket No. 50-155, NRCI-75/8, CLI-75-10, p. 188. "The scope of the NEPA review in this case should, of course, be tailored to the possible environmental impact resulting from increasing the amount of plutonium in this one reactor . . . . Discussion of possible adverse environmental effects and alternatives to the proposed action can be limited accordingly. The statement need not, for example, discuss alternatives to plutonium recycle and other generic matters properly treated in GESMO." *Id.* at 190.

In the words of the agency's order, "The Commission has concluded that interim licensing may be issued for fuel recycle related activities . . . ."

> "While the Commission is properly mindful that certain licensing actions have the potential for foreclosing subsequent alternatives, it cannot disregard the equally hard reality that inaction or a blanket prohibition on fuel recycle related licensing actions could also foreclose or substantially impede realization of energy alternatives which may contribute significantly to meeting national needs." (40 Fed.Reg. at 53061.)

As bases for this reversal of its position of May 8, 1975, the Commission set forth its belief that any environmental or health aspects of interim activity can be adequately addressed through interim reviews and that interim licensing will not foreclose any significant health, safety or environmental alternatives.

It is important to note what is encompassed by the term "interim activity". The Commission will allow separation of plutonium and uranium from fuel wastes; it will allow reprocessing of the fuel into forms suitable for use; it will allow fabrication of mixed oxide fuel; it will permit use of mixed oxide fuel in presently existing light water reactors; it will license plant construction to achieve the foregoing steps; and it will permit the transportation, including international transportation, of mixed oxide fuel in its various processing stages. All of the foregoing activities will be allowed on a commercial-scale level. The order expressly states that "no limits will be placed on the number of light water reactors for which . . . authorization [to convert from use of uranium to plutonium] may be granted." (40 Fed.Reg. at 53062.) In addition, the order does not state that there will be any limits on the other recycle activities allowed in the period prior to the final decision on GESMO.

Certain of the above interim activities will be permitted upon the application of special interim eligibility criteria. The special criteria will not be applied to the use of mixed oxide fuel in presently existing power plants or to the transportation of plutonium materials. The Commission concluded that conversion of light water reactors to mixed oxide fuel need not be subject to special standards because such conversion does not require significant design changes and because such conversion is reversible in the event that the final decision is adverse to the wide-scale use of mixed oxide fuel. The transportation of plutonium will be allowed without application of special standards in light of the Commission's view that such transportation would be constrained by practical limitations and in light of the Commission's belief that such limited transportation would not present factors which are not already present in the existing transportation of enriched uranium.

Accordingly, the interim eligibility criteria will apply only to individual applications for interim licenses for commercial fuel reprocessing and mixed oxide fuel fabrication. The interim standards are as follows:

> "(1) Whether the activity can be justified, from a NEPA cost-benefit standpoint, without placing primary reliance on an anticipated favorable Commission decision on wide-scale use of mixed oxide fuel;
>
> "(2) Whether the activity would give rise to an irreversible and irretrievable commitment of resources that would unjustifiably foreclose for the activity substantial safeguard alternatives that may result from the decision on wide-scale use; and
>
> "(3) The effect of delay in the conduct of the activity on the overall public interest." (40 Fed.Reg. at 53062.)

These criteria, combined with consideration of Draft GESMO, led the Commission to conclude that interim licensing

> "is not likely to result in such a substantial further commitment of resources that the final decision on the costs and benefits of the public health and safety and environmental aspects of wide-scale use of mixed oxide fuel would be significantly affected or that generic determinations on such aspects would be foreclosed." (40 Fed.Reg. at 53061.)

Finally, the Commission also concluded that a refusal to allow interim commercial activity would result in "the disruption or cessation of planning as well as the production of useful data," and might result in "economic penalties on the American public through increased costs to electrical utilities caused by delaying the use of resources available in spent fuel . . . ." (*Id.*)

The order of the Commission also addressed safeguards which will be required in the interim period. In essence, only those safeguards presently required by law will be imposed (See 10 C.F.R. Parts 70 and 73), although the Commission has stated that it is considering certain new and additional safeguards. According to the order, final requirements for safeguards in the interim period will be announced at the same time as the issuance of Final GESMO.

IV. *Reviewability*

The first question which must be addressed is whether the November 11, 1975 decision of the Commission is a final order reviewable in this court. Petitioners urge that jurisdiction to review is present pursuant to 28 U.S.C. § 2342(4), which grants to this court exclusive jurisdiction to enjoin, set aside, suspend in whole or in part, or to de-

termine the validity of all final orders of the Nuclear Regulatory Commission made reviewable by section 2239 of Title 42. Petitioners state that the order below is a final order entered in a Commission proceeding for the issuance or modification of rules and regulations dealing with the activities of nuclear power licensees; see 42 U.S.C. § 2239(a) and (b).[9] Petitioners also argue that this court has jurisdiction to review a decision of an agency implementing NEPA or refusing to refrain from licensing until the filing of an impact statement. See *Scientists' Institute for Public Information, Inc.* v. *Atomic Energy Commission*, 156 U.S.App.D.C. 395, 481 F.2d 1079, 1094 (1973). Further, it is urged that we may properly review agency criteria for upcoming licensing proceedings; see *Coalition for Safe Nuclear Power* v. *Atomic Energy Commission*, 150 U.S.App.D.C. 118, 463 F.2d 954 (1972) (per curiam).

Respondents argue that the November 11, 1975 order is not reviewable, since it grants no licenses and simply sets forth licensing criteria for future proceedings; see *Citizens for a Safe Environment* v. *Atomic Energy Commission*, 489 F.2d 1018, 1021 (3d Cir. 1973). Respondents also cite the rule that an agency's procedural or evidentiary rulings made in the course of a licensing proceeding are not reviewable except in extraordinary circumstances not present here; see *Ecology Action* v. *Atomic Energy Commission*, 492 F.2d 998, 1001 (2d Cir. 1974).

The cases relied upon by respondent for the proposition that the order below is not reviewable relate primarily to refusals to review agency rulings made in the course of an individual licensing proceeding; see *Ecology Action, supra; Citizens for a Safe Environment, supra; Thermal Ecology Must be Preserved* v. *Atomic Energy Commission*, 139 U.S.App.D.C. 366, 433 F.2d 524, 525-26 (1970) (per curiam). These cases are not dispositive here for two rea-

[9] See note 2, *supra*.

sons. First, this court has on occasion reviewed essentially "interlocutory" rulings made by an agency in a NEPA proceeding; see *Greene County Planning Board* v. *Federal Power Commission (Greene I)*, 455 F.2d 412, 425 (2d Cir.), *cert. denied*, 409 U.S. 849, 93 S.Ct. 56, 34 L.Ed.2d 90 (1972). More fundamentally, petitioners here do not seek review from an order entered in the course of an individual licensing proceeding; rather, the regulations challenged here will apply to *all* interim licensing proceedings, as well as to the GESMO hearings; see *Harlem Valley Transportation Association* v. *Stafford*, 500 F.2d 328, 334-35 (2d Cir. 1974).

Initially, we note that no distinction exists for review purposes between agency adjudications and other pronouncements, such as rulemaking; see *Pacific Gas & Electric* v. *Federal Power Commission*, 164 U.S.App.D.C. 371, 506 F.2d 33, 48 (1974); *Gage* v. *Atomic Energy Commission*, 156 U.S.App.D.C. 231, 479 F.2d 1214 (1973). It is clear that the decision below is essentially an exercise in rulemaking.

To determine finality, the appropriate inquiry is whether the process of administrative decision-making has reached a stage where judicial review will not be disruptive of the agency process and whether legal consequences will flow from the action taken; see *Port of Boston Marine Terminal Association* v. *Rederiaktiebolaget Transatlantic*, 400 U.S. 62, 71, 91 S.Ct. 203, 27 L.Ed.2d 203 (1970). This test is satisfied here since the Commission has made a final decision, after months of consideration, to the effect that it may proceed to interim licensing of mixed oxide fuel related activities without awaiting the release of Final GESMO or a final decision on wide-scale use. Further, it is clear that NEPA legal consequences flow from that decision since the order below sets forth rules concerning how the agency will comply with the environmental laws. Review at such a stage is proper; see *Harlem Valley*, *supra*; *Calvert Cliffs'*

Coordinating Committee, Inc. v. *Atomic Energy Commission*, 146 U.S.App.D.C. 33, 449 F.2d 1109 (1971). Review at this juncture will not disrupt agency proceedings:

> "Here there is no specific proceeding to disrupt since we are concerned with a rule that is applied to all [Commission] proceedings, and the [Commission] has determined, as it views them, its obligations under NEPA." (*Harlem Valley, supra*, at 334.)

In this case the agency has issued proposed rules, invited and received comments, and issued finalized rules. Review by this court is proper, even though no licenses have been granted or denied and even though the rules relate only to licensing standards; see *United States* v. *Storer Broadcasting Co.*, 351 U.S. 192, 198, 76 S.Ct. 763, 100 L.Ed. 1081 (1956). Agency decisions are ripe for this court's consideration when the issues and the record are suitable for review and the agency decision has an immediate and significant impact; see *Pacific Gas & Electric, supra*. This test is satisfied since the court is presented with an administrative record of more than fifteen hundred pages, as well as the Draft GESMO, and the May 8, 1975 and November 11, 1975 decisions of the Commission; the NEPA issues are clear and the decision to proceed to commercial interim licensing has an immediate and significant impact on the Commission's future course of action.

In urging that the controversy herein is not ripe for judicial review respondents rely upon cases which deal with review pursuant to the Administrative Procedure Act, 5 U.S.C. § 701 et seq.;[10] however, it appears that APA standards are not applicable in a proceeding such as this one where judicial review is sought in this court directly from

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[10] A proceeding made reviewable by 42 U.S.C. § 2239, see note 2 *supra*, may be reviewed in this court under 28 U.S.C. § 2342 or in the district court under 5 U.S.C. § 702; see 42 U.S.C. § 2239(b).

the agency decision, rather than initially in the district court; see *Greene County Planning Board* v. *Federal Power Commission (Greene III)*, 528 F.2d 38, 46 (2d Cir. 1975). But even if the APA standards for ripeness are applied, the procedural issues are ripe for review since the substantive NEPA questions are suitable for judicial consideration and since the hardship to all parties would be considerable if review were denied at this time and it was later determined that the Commission's guidelines led to fundamental flaws in the environmental inquiry. The Supreme Court has indicated that the analysis of whether agency action is ripe for review should be a flexible one; see *Toilet Goods Association, Inc.* v. *Gardner*, 387 U.S. 158, 162, 87 S.Ct. 1520, 18 L.Ed.2d 697 (1967); *Abbott Laboratories* v. *Gardner*, 387 U.S. 136, 148-50, 87 S.Ct. 1507, 18 L.Ed.2d 681 (1967), and in the past this court has noted the problems which could result were we to take an inflexible approach to review; see *Greene I, supra;* see also *Citizens for a Safe Environment, supra.*

The impact of the Commission's decision is highly significant, for it sets the course for the commercial introduction of a new nuclear technology. Upon consideration of all the foregoing principles, we conclude that the November 11, 1975 order is a final order which issues regulations in a proceeding under 42 U.S.C. § 2239(a) and (b) and that this court has jurisdiction pursuant to 28 U.S.C. § 2342(4).

V. *Procedures for the GESMO and related hearings*

Petitioners ask this court to declare the procedural guidelines set forth in the November 11, 1975 notice violative of NEPA's direction that federal agencies

> "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment." (42 U.S.C. § 4332(2)(A).)

The essence of petitioners' objection to the procedural guidelines is that the Commission, by separating the GESMO hearings into two parts and by separating local from generic issues, has so fragmented the environmental inquiry that the study will not be sufficiently integrated or interdisciplinary. Further, petitioners claim that the decision to proceed through primarily legislative-type hearings on GESMO and through staff reviews on individual applications, allowing hearings of an adjudicatory nature only in limited circumstances, is contrary to NEPA and to 42 U.S.C. § 2239(a), which deals with Commission licensing hearings.

It is a long established principle that a federal agency has discretion whether to proceed by rulemaking or by adjudication; see *Securities and Exchange Commission* v. *Chenery Corp.*, 332 U.S. 194, 203, 67 S.Ct. 1575, 91 L.Ed. 1995 (1947); *Morningside Renewal Council, Inc.* v. *Atomic Energy Commission*, 482 F.2d 234 (2d Cir. 1973), *cert. denied*, 417 U.S. 951, 94 S.Ct. 3080, 41 L.Ed.2d 672 (1974). An agency has broad latitude to determine in what order, in what forum, and by what procedures it will tackle a complex subject matter. The courts cannot direct the Commission to decide its cases in a particular order, see *Federal Communications Commission* v. *WJR*, 337 U.S. 265, 272, 69 S.Ct. 1097, 93 L.Ed. 1353 (1949); only Congress could confer such a priority; see *Federal Communications Commission* v. *Pottsville Broadcasting Co.*, 309 U.S. 134, 145, 60 S.Ct. 437, 84 L.Ed. 656 (1940). There is no dispute that the GESMO inquiry presents difficult and complex questions. As stated by the Supreme Court, "[w]e can see no justification for denying the Commission reasonable latitude to decide where it will resolve these complex issues, in addition to how it will resolve them." *American Commercial Lines* v. *Louisville & Nashville R.R.*, 392 U.S. 571, 592, 88 S.Ct. 2105, 2116, 20 L.Ed.2d 1289 (1968). This reasonable latitude extends to the methods which the agency employs and to the scope of proceedings which the agency will undertake; *id;* see also

The Permian Basin Area Rate Cases, 390 U.S. 747, 776, 88 S.Ct. 1344, 20 L.Ed.2d 312 (1968).

NEPA does not require extensive administrative proceedings; neither the Administrative Procedure Act nor the environmenal laws compel an agency to appoint an examiner and conduct hearings; see *National Helium Corp.* v. *Morton*, 455 F.2d 650, 656-57 (10th Cir. 1971). Indeed, the text of NEPA does not require agency hearings, see 42 U.S.C. §§ 4321-4347, and courts have refused to read such a requirement into the statute; see *Lathan* v. *Brinegar*, 506 F.2d 677, 689 (9th Cir. 1974); *Jicarilla Apache Tribe of Indians* v. *Morton*, 471 F.2d 1275, 1286 (9th Cir. 1973).

It is true that certain decisions have expressed a concern that issues of great importance be accompanied by expanded procedural rights, and that limited cross-examination be afforded on crucial issues raised in the agency proceeding; see *Appalachian Power Co.* v. *Environmental Protection Agency*, 477 F.2d 495, 503 (4th Cir. 1973); *O'Donnell* v. *Shaffer*, 160 U.S.App.D.C. 266, 491 F.2d 59, 62 (1974); *Greene I, supra*, 455 F.2d at 422. The philosophy of these cases is applicable herein in light of the magnitude and the gravity of the Commission's inquiry.

"The choice is not between a full trial-type hearing and no public proceeding at all. The goal is rather to insure that administrators provide a 'framework for principled decision-making'—a framework that is appropriate for the the issue at hand". (*O'Donnell* v. *Shaffer, supra*, 491 F.2d at 62, quoting *Environmental Defense Fund, Inc.* v. *Ruckelshaus*, 142 U.S.App.D.C. 74, 439 F.2d 584, 598 (1971).)

In its rulemaking order below, the Commission has determined that the GESMO hearings will be primarily legislative in character and that adjudicatory hearings will be held if a need for such proceedings is demonstrated. While direct cross-examination will not be allowed in the legislative phase, the participants will be permitted to sub-

mit questions for the witnesses through the hearing board. Direct cross-examination will be permitted in the adjudicatory hearings, if any, which follow. We believe that these procedures are reasonable, and note that nearly identical guidelines were upheld as adequate in *International Harvester Co.* v. *Ruckelshaus,* 155 U.S.App.D.C. 411, 478 F.2d 615 (1973). In that decision the Court of Appeals for the District of Columbia Circuit observed that "in a situation where 'general policy' is the focal question, a legislative-type hearing is appropriate." *Id.* at 630. The court assessed the procedural limitations imposed by the Environmental Protection Agency in terms equally applicable to this case:

> "In context, we consider that the technique, adopted by EPA, of pre-screening written questions submitted in advance is reasonable and comports with basic fairness as the general procedure. This approach permits screening by the hearing officer so as to avoid irrelevance and repetition, permits a reasonable estimate of the time required for the questioning, and aids scheduling and allocation of available time among various participants and interests, . . . [A] right of cross-examination, consistent with time limitations, might well extend to particular cases of need, on critical points where the general procedure proved inadequate to probe 'soft' and sensitive subjects and witnesses." (*Id.* at 631.)

We interpret the Commission's rules to provide for just such a procedure. We would expect that an opportunity for cross-examination will be afforded upon a threshold showing that the legislative procedures have been inadequate. While the Commission need not allow the GESMO hearings to become a forum for the individual environmental philosophies of every participant, we would expect that it will endeavor to allow meaningful participation by the public interest groups whose limited resources

often relegate them to the role of contesting the studies and conclusions of industry participants. Cross-examination has been described as the most effective method through which to locate factual truth; we expect that this powerful procedural device will be appropriately utilized in a study as important as the GESMO.

Decisions regarding these matters of procedure repose in the sound discretion of the Commission. Similarly, we believe that the Commission's decision to bifurcate the hearings between GESMO and the individual licensing proceedings is well within its reasonable latitude to control its docket. So long as each final decision on any major federal action, individual or generic, comports within the requirements of NEPA and the other regulations required by the energy acts, it matters not whether certain issues are addressed in the broadscale inquiry and others in limited individual proceedings; see *Scientists' Institute, supra*, 481 F.2d at 1092-93. Because we conclude herein that no commercial licensing will be allowed in the interim period before the completion of the GESMO inquiry, the Commission's fragmentation of the environmental inquiry will not destroy the integrated and interdisciplinary approach envisioned by NEPA; rather, it will probably result in considerable administrative efficiency and avoid needless duplication. If the Commissioners have before them all relevant considerations including GESMO and all individual site factors when they decide whether to grant or deny a license, NEPA's procedures are satisfied and a court should find itself provided with an adequate record on appeal should there be judicial review.

Petitioners' final dispute with the Commission over procedure is addressed to the bifurcation of the GESMO study itself, and the decision to hold the GESMO hearings in two phases. Petitioner Natural Resources Defense Council argues that the safeguards issues to be considered by the GESMO supplement should not be separated from the

other environmental and health considerations addressed by the rest of GESMO.

The principles of agency discretion discussed above lead us to the conclusion that the Commission should not be required to withhold Final GESMO until such time as the safeguards supplement is completed. Such a moratorium on consideration of the mixed oxide fuel issue by the Commission and the public could indeed cause needless delay and inaction. For the same reasons, we find no error in the Commission's decision to proceed with hearings on Final GESMO before the issuance of the safeguards supplement.

The argument that a bifurcated impact statement violates NEPA is foreclosed by the recent decision of this court in *Natural Resources Defense Council, Inc.* v. *Callaway*, 524 F.2d 79 (2d Cir. 1975). In that case Judge Mansfield, for the court, considered an impact statement which had been supplemented and concluded that

> "the use of supplemental data and statements is permissible to bolster an otherwise deficient EIS or to amend an EIS to consider changes in the proposed federal action when the 'supplemental' adequately remedies the deficiency or analyses the impact of the proposed change and is properly circulated among the appropriate agencies before a final decision has been reached." (*Id.* at 91-92.)

Other decisions have invited or required supplements to impact statements, and we are aware of no decision which has held that the agency must issue the impact statement all in one piece all at one time; see *Indian Lookout Alliance* v. *Volpe*, 484 F.2d 11, 20 (8th Cir. 1973); *Jicarilla Apache Tribe of Indians* v. *Morton*, 471 F.2d 1275, 1280-81 (9th Cir. 1973); *Natural Resources Defense Council, Inc.* v. *Morton*, 148 U.S.App.D.C. 5, 458 F.2d 827, 837 (1972).

The court assumes that the implementation of these rules will occur in a manner which will strike a proper balance between administrative efficiency and the need for a full public discussion of the complex and far-reaching question of commercial implementation of the uranium and plutonium mixed oxide fuel recycle. We conclude that the procedural guidelines set forth for the GESMO and the individual licensing hearings, the allocation of issues between generic and local inquiries, and the issuance of the GESMO in two segments, as well as the bifurcation of the GESMO hearings, are all matters within the Commission's discretion. We pass now to a review of the Commission's determination to allow interim commercial licensing.

VI. *Interim Licensing*

In its January 20, 1975 letter to the Nuclear Regulatory Commission, the President's Council on Environmental Quality made the following observation:

> "The potential impact of the diversion and illicit use of special nuclear materials are well recognized. This threat is so grave that it could determine the acceptability of plutonium recycle as a viable component of this Nation's nuclear electric power system. Thus, we believe that the NRC, the Executive Branch, the Congress, and the American people should have the benefit of a full discussion of the diversion and safeguards problem, its impacts, and potential mitigating measures, before any final decisions are made on plutonium recycle.
>
> "The National Environmental Policy Act requires that, in preparing an environmental impact statement, the agency develop and describe appropriate alternatives where unresolved conflicts exist. Alternative safeguards programs for dealing with the threat of diversion of special nuclear materials have not yet been developed. As such, the information necessary

to make sound and reasoned decisions on plutonium recycle was not available for governmental and public consideration in the draft GESMO. Because of this, the Council believes that the draft environmental impact statement does not meet the requirements of the National Environmental Policy Act." (Attachment C to NRDC brief.)

Despite the foregoing opinion of the CEQ, the Commission has determined that Draft GESMO is an adequate statement to support its decision to license what it has referred to as "interim" activity. Petitioners urge that, despite its breadth of inquiry, Draft GESMO is as inadequate a basis for the activity envisioned as it would be for a decision on wide-scale use.

The requirements of the NEPA apply to the development of a new technology as forcefully as they apply to the construction of a single nuclear power plant. It cannot be doubted that the Congress, in enacting NEPA, intended that agencies apply its standards to the decision to introduce a new technology as well as to the decision to license related activity; see 42 U.S.C. § 4331(a) (1970); S. Rep. No. 91-296, 91st Cong., 1st Sess., 20 (1969).[11] The fact that the environmental effects of such a decision about a new technology will not emerge for years does not mean that the program does not affect the environment or that an impact statement is unnecessary; see *Scientists' Institute, supra*, 481 F.2d 1079, 1089-90 (discussing the technology of the uranium breeder reactor). In numerous cases involving the commercial introduction of a new technology, as

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[11] "The legislative history of the Act indicates that the term 'actions' refers not only to construction of particular facilities, but includes 'project proposals, proposals for new legislation, regulations, policy statements, or expansion or revision of ongoing programs . . .'" *Scientists' Institute, supra*, 481 F.2d at 1088, quoting S.Rep. No. 91-296, 91st Cong., 1st Sess., 20 (1969), U.S.Code Cong. & Admin. News 1969, p. 2751.

well as in cases where the agency has undertaken isolated activity which the courts found to be in actuality part of a larger program, the courts have not hesitated to identify major federal action on the broader scale and to require the preparation of a regional or generic impact statement before allowing major federal action to proceed. See *Sierra Club* v. *Morton*, 169 U.S.App.D.C. 20, 514 F.2d 856 (1975), *cert. granted*, 423 U.S. 1047, 96 S.Ct. 772, 46 L.Ed.2d 635, 44 U.S.L.W. 3397 (1976) (requiring a regional impact statement for coal mining in the Northern Great Plains area); *Conservation Society of Southern Vermont, Inc.* v. *Secretary of Transportation, (Conservation Society I)*, 508 F.2d 927 (2d Cir. 1974), vacated and *remanded*, 423 U.S. 809, 96 S.Ct. 19, 46 L.Ed.2d 29, 44 U.S.L.W. 3199 (1975);[12] *Scientists' Institute, supra*, (declaratory judgment that the AEC must prepare a generic impact statement for the new technology of the breeder reactor); see also *Indian Lookout Alliance* v. *Volpe*, 484

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[12] In vacating the order of this court in *Conservation Society I*, the Supreme Court, in a summary order, wrote that "the case is remanded to the United States Court of Appeals for the Second Circuit for further consideration in light of Pub.L. 94-83 and *Aberdeen & Rockfish R. R.* v. *SCRAP*, 422 U.S. 289, 95 S.Ct. 2336, 45 L.Ed.2d 191 (1975)." 423 U.S. at 809, 96 S.Ct. at 19, 46 L.Ed.2d 29, 44 U.S.L.W. at 3199. Pub.L. 94-83 amends § 102 of the NEPA and provides that an impact statement is not inadequate solely because it is prepared by the federal agency in conjunction with preparation by state authorities; see 42 U.S.C. § 4332(D). The amendment is not relevant to this appeal, there being no issue concerning the party preparing the impact statement. On remand in *Conservation Society of Southern Vermont, Inc.* v. *Secretary of Transportation*, 531 F.2d 637 (2d Cir. 1976) (*Conservation Society II*), this court interpreted the decision in *Aberdeen & Rockfish R. R.* v. *SCRAP*, 422 U.S. 289, 95 S.Ct. 2336, 45 L.Ed.2d 191 (1975) to hold that a broad scale impact statement is not required where the activity under review presents no irreversible or irretrievable commitment of resources. See *Conservation Society II*, *infra*, 531 F.2d 637, at 639. The applicability of *SCRAP* to this appeal is discussed, *infra*.

F.2d 11 (8th Cir. 1973). Such broad-scale impact statements may be required for a series of major federal actions, even though individual impact statements are to be prepared for each isolated project; see *Sierra Club, supra,* at 871; *Scientists' Institute, supra.* Otherwise, agencies could take an approach "akin to equating an appraisal of each tree to one of the forest." *Jones* v. *Lynn,* 477 F.2d 885, 891 (1st Cir. 1973).

In both *Sierra Club* and *Scientists' Institute, supra,* the Court of Appeals for the District of Columbia Circuit employed a four-prong test to determine whether the action under review required a broad-scale impact statement. That test is as follows:

> "[1] How likely is the program to come to fruition, and how soon will that occur?
>
> "[2] To what extent is meaningful information presently available on the effects of implementation of the program, and of alternatives and their effects?
>
> "[3] To what extent are irretrievable commitments being made and options precluded as refinement of the proposal progresses?
>
> "[4] How severe will be the environmental effects if the proposal is implemented?" (*Sierra Club, supra,* at 880.)

Under these guidelines, the Commission's decision to initiate the GESMO study was a decision clearly mandated by NEPA. The growth of plutonium-related activities in recent years makes it clear that the nuclear power industry as a whole is steadily progressing towards the launching of a new era of commercial nuclear technology. Important environmental questions are involved in the utilization of plutonium recycle. These questions are common to the industry and transcend issues relative to the local impact of any one nuclear power plant.

The existence of Draft GESMO and the preparation of the supplement demonstrate that meaningful information on the effects of implementation is available. The GESMO's limited consideration of alternatives (use plutonium now; use plutonium later; never use plutonium) demonstrates that refinement of the proposal may have already precluded other options. Finally, the record is replete with assessments of the possible adverse environmental effects, as well as the clearly hazardous consequences of theft, diversion or sabotage of plutonium.

Thus, NEPA clearly required the GESMO study; the principal question on this appeal is whether NEPA requires the agency to refrain from commercial implementation until that study is complete and a final agency decision is made.

Many of the underlying questions in this inquiry are easily resolved. It is apparent that draft GESMO did not fully address alternatives to plutonium recycle or the special problems of theft, diversion and sabotage. Thus, a totally neutral application of the literal language of NEPA, specifically § 4332(C)(ii) & (iii) and § 4332(E), lead to the inescapable conclusion that Draft GESMO is a legally insufficient environmental impact statement. Previous decisions support this conclusion; the consideration of alternatives and of special hazards to the public health, safety and welfare are vital to *any* impact statement, and numerous statements have been overturned for their failure to address these questions. See, e.g., *Natural Resources Defense Council* v. *Callaway*, 524 F.2d 79, 92-94 (2d Cir. 1975); *Natural Resources Defense Council, Inc.* v. *Morton*, 148 U.S.App.D.C. 5, 458 F.2d 827, 833-34 (1972). In fact, this court has held that a consideration of alternatives is required under NEPA whenever the agency action has an environmental impact, even if no formal impact statement is filed; see *Trinity Episcopal School Corp.* v. *Romney*,

523 F.2d 88, 93 (2d Cir. 1975) (requiring compliance with NEPA for federal funding of urban renewal).

The Commission has conceded that draft GESMO is not an adequate impact statement for wide-scale use. At the very least, the discussion of safeguards must be completed. However, the Commission proposes to proceed to commercial-scale licensing without the benefit of the safeguards supplement. The Commission has concluded that Draft GESMO, and the individual impact statements which will address issues other than those being covered by GESMO, combined with a consideration of its special eligibility criteria, will form an adequate NEPA basis for licensing decisions.

First, we note that the "interim criteria" will not be applied to the use of mixed oxide fuel or to its transportation. Thus, the Commission will allow the nuclear power industry to create a market for mixed oxide fuel which is as large as the industry desires. Further, transportation will be unrestricted and therefore the widest possible number of persons will be exposed to the possibility of a nuclear incident before the release of the supplement on safeguards. Because the impact statements which will accompany fuel use and transportation will not consider GESMO issues, those statements cannot be adequate under NEPA.

The interim criteria which will be applied to mixed oxide fuel separation and fabrication require Commission inquiry as to whether the activity will place primary reliance on a favorable final decision in GESMO, whether the activity would foreclose safeguards alternatives by committing resources, and whether delay in the conduct of the activity would adversely effect the "overall public interest". We find these criteria at best vague and at worst disingenuous. An activity need not place primary reliance on a favorable decision on wide-scale use for the activity to severely prejudice the ultimate decision. Second, we are unable to understand how the Commission will be able to determine that

a given activity will not foreclose safeguards when those safeguards have not yet been designed or finalized. Finally, the "delay" criteria injects consideration of non-environmental public interest factors which could have the effect of foreclosing the outcome of the test's application. In fact, this court has recently rejected increased cost or delay as a justification for non-compliance with the procedural dictates of NEPA; see *Conservation Society I, supra*, 508 F.2d at 933; see also *Calvert Cliffs', supra*, 449 F.2d at 1128.[18]

The only other legal argument apparently advanced by the Commission to justify its decision to license commercial activity is that the decison to proceed to interim licensing does not constitute major federal action as that term is employed by NEPA. We must consider this argument in light of the scope of activities that will be allowed, and in light of the scope of mixed oxide fuel license applications now pending before the Commission. The order below states that the Commission will allow licensing of commercial-scale separation and reprocessing, as well as of transportation and use of plutonium. The Commission has placed no numerical limitations on the number of licenses which it will grant and we have concluded that the interim licensing eligibility criteria are wholly inadequate. Thus, there is little but the word "interim" itself to distinguish the scope of activity which will be allowed from the scope of

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[18] Petitioner NRDC argues that the Commission may not include public interest factors as part of a licensing decision under § 161 of the Atomic Energy Act, 42 U.S.C. § 2201; see *New Hampshire v. Atomic Energy Commission*, 406 F.2d 170, 175 (1st Cir. 1969). However, NEPA permits public interest analysis, even in a nuclear power licensing decision; see *Citizens for Safe Power Inc. v. Nuclear Regulatory Commission*, 524 F.2d 1291 (D.C.Cir. 1975). Thus, consideration of the public interest is not improper so long as those factors are not permitted to outweigh environmental concerns. To the extent that the interim criteria appear to allow such a counter-balancing, we find them to be defective.

activity which would be presently possible had the Commission allowed immediate commencement of "wide-scale use".

Prior decisions have halted "interim" agency licensing activity pending the completion of a generic or regional environmental impact statement. In *Sierra Club* v. *Morton*, the Court of Appeals for the District of Columbia Circuit entered an order restraining most federal licensing of strip mining in a four-state area until a regional impact study was completed, despite the agency's protestation that there was in fact no broad-scale plan for the development of the entire region. More recently, in *Natural Resources Defense Council, Inc.* v. *Callaway, supra*, this court restrained federal dumping in the Long Island Sound until the impact statement was supplemented to address alternatives and other planned dumping projects.

In the above cases, the "interim" activity was restrained because such activity involved irretrievable commitments of resources which would serve to tip the balance away from environmental concerns and prejudice the final agency decision. *In Conservation Society I, supra*, this court warned that we must consider the possibility that there are "options often imperceptibly foreclosed by fragmented growth," 508 F.2d at 936, and that the commitments of resources already being made "would curtail *subsequent* broad-scale assessment of alternatives." *Id.* at 935. In *Natural Resources Defense Council, Inc.* v. *Callaway, supra*, this court observed that it is the "cumulative environmental impact which must be evaluated as a whole." 524 F.2d at 89.

The granting of licenses to private industry is a familiar and well established example of major federal action; see *Sierra Club* v. *Morton, supra*, 514 F.2d at 875; *Davis* v. *Morton*, 469 F.2d 593 (10th Cir. 1972); *Greene I, supra*; *Scenic Hudson Preservation Conference* v. *Federal Power Commission*, 453 F.2d 463 (2d Cir. 1971); *Calvert Cliffs'*

supra. Plutonium technology has never been generally licensed for commercial use; the order below gives a green light for the industry to commence planning and implementation of a second generation of atomic fuel technology.

In this factual context, the recent decision of the Supreme Court in *Aberdeen & Rockfish R.R.* v. *SCRAP*, 422 U.S. 289, 95 S.Ct. 2336, 45 L.Ed.2d 191 (1975) is clearly distinguishable. In that case, the Court allowed the Interstate Commerce Commission to proceed to grant "interim" railroad freight rate increases pending its completion of a NEPA study of the ICC's entire rate structure on the question of whether the rate structure discriminated against shipment of recyclables. The Supreme Court noted that the interim increase was "entirely nonfinal" and that it was facially neutral in its own environmental impact; see *Id.* at 322-26, 95 S.Ct. 2336. *SCRAP* therefore involved no irreversible commitment of resources; in fact a rate increase involves almost no commitments of resources; see *Conservation Society of Southern Vermont, Inc.* v. *Secretary of Transportation* (*Conservation Society II*), 531 F.2d 637, 638, 639-40 (2d Cir. 1976) (*per curiam*).

This is not a case where the proposed activity has independent utility; see *Id.*; *Friends of the Earth* v. *Coleman*, 513 F.2d 295, 299-300 (9th Cir. 1975), or where the proposed interim activity is "substantially independent" of the issue of wide-scale use; see *Trout Unlimited* v. *Morton*, 509 F.2d 1276, 1285 (9th Cir. 1974). Rather, the interim activity is clearly tied to the anticipated wide-scale use and would commit substantial resources to the mixed oxide fuel technology. Here the activity which will be permitted involves construction of nuclear separation and reprocessing facilities, conversion of light water nuclear reactors to use of mixed oxide fuel, and the implementation of "interim" safeguards for the transportation of a deadly and highly radio-toxic nuclear material. Each of these steps will tip the scale towards a favorable final decision on wide-scale

use. Each of these steps will move the nation towards the use of a hazardous nuclear fuel the implications of which are not fully understood. We accordingly conclude that the order below constitutes major federal action which has not been accompanied by an adequate NEPA analysis.

Taking such action before the completion of the environmental impact analysis has been branded as making a "mockery" of the procedural mandates of NEPA; see *Natural Resources Defense Council, Inc.* v. *Callaway, supra,* 524 F.2d at 92. As the court stated in *Scientists' Institute, supra,*

> "by the time commercial feasibility of the technology is conclusively demonstrated, and the effects of application of the technology certain, the purposes of NEPA will already have been thwarted. Substantial investments will have been made in development of the technology and options will have been precluded without consideration of environmental factors." (481 F.2d at 1093-94).

We conclude that the interim licensing envisioned by the Commission's decision would indeed result in such a substantial further commitment of resources that the final decision on the costs and benefits of the public health and safety and environmental aspects of wide-scale use of mixed oxide fuel would be significantly affected and that generic determinations of these issues, and particularly of safeguards alternatives, could be effectively foreclosed. The Commission's conclusion to the contrary is clearly erroneous and is not supported by the record.

Decisions dealing with nuclear power plants have emphasized that the crucial juncture for the NEPA decision is the pre-operating license stage where construction is allowed to proceed with its attendant massive investment of capital and manpower. It is clear that plutonium technology is at

that juncture and we are convinced that if the Commission is allowed to proceed in the manner set forth above, the crucial decision will have been made without compliance with NEPA. Whether or not the final decision favors wide-scale use of plutonium, the Commission's decision to allow interim commercial activities with "interim" safeguards standards is very likely to result in "grandfathering" of the existing facilities due to the expense involved in backfitting plants to add safeguards yet to be designed.

> "In the language of NEPA, there is likely to be an 'irreversible and irretrievable commitment of resources,' which will inevitably restrict the Commission's options. Either the licensee will have to undergo a major expense in making alterations in a completed facility or the environmental harm will have to be tolerated. It is all too probable that the latter result would come to pass." (*Calvert Cliffs', supra,* 449 F.2d at 1128.)

We conclude that the November 11, 1975 order, insofar as it allows the Commission to grant licenses for interim commercial activity, is in violation of the NEPA. The Commission has chosen to address generic issues in a broad-scale inquiry in order to comply with the NEPA. However, by so doing, it cannot be allowed to circumvent the mandates of NEPA by granting interim licenses on the basis of records which exclude the generic aspects. While the Commission may of course grant licenses for experimental and feasibility purposes in the interim period, it must refrain from unlimited commercial licensing until after it has made a final decision on all questions presented by GESMO.

> "Although an EIS may be supplemented, the critical agency decision must, of course, be made after the supplement has been circulated, considered and discussed in the light of the alternatives, not before. Otherwise

> the process becomes a useless ritual, defeating the purpose of NEPA, and rather making a mockery of it." (*Natural Resources Defense Council, Inc.* v. *Callaway, supra,* 524 F.2d at 92.)

It is undisputable that the motives of the Commission, to develop new sources of energy and to recycle dwindling uranium reserves, are highly commendable; however, those national needs cannot outweigh the far-reaching national concerns embodied in NEPA. "Considerations of administrative difficulty, delay or economic cost will not suffice to strip [NEPA] of its fundamental importance." *Calvert Cliffs', supra,* 449 F.2d at 1115.

We express no opinion on the merits of the question of wide-scale use of mixed oxide fuel. That decision is one for the Commission initially, and is not before the court. We do not conclude that the Commission must refrain from all action until the final decision on GESMO; rather, the Commission can process license applications, rule on the scope of hearings and applications for intervention, and even proceed to hold individual hearings to gather relevant data on individual site factors. All this may be undertaken before the final decision on wide-scale use, and the Commission may fully employ the bifurcated procedures which we have considered above. However, the Commission may not grant or deny applications for commercial licenses to construct or operate plutonium-related separation or reprocessing facilities, nor may it license commercial scale transportation or use of plutonium and uranium mixed oxide fuel, until the GESMO and the GESMO supplement have been issued in final form and until the Commission has made its final decision on wide-scale use of mixed oxide fuel.

Petitioners also argue that the order is in violation of the Atomic Energy Act, 42 U.S.C. § 2201 et seq., and the Energy Reorganization Act of 1974, 42 U.S.C. § 5841 et seq. While these contentions lend some weight to petitioners' NEPA

arguments, we find that, as presented, they fail to establish independent bases to sustain an attack on the Commission's decision.[14]

The decision of the Nuclear Regulatory Commission dated November 11, 1975 is affirmed insofar as it specifies guidelines and procedures for the completion of the GESMO hearings and insofar as it establishes the scope of and the procedures for individual licensing hearings. The November 11, 1975 order, insofar as it allows the granting of interim commercial licenses for mixed oxide fuel related activities, is reversed and remanded to the Commission.

Remanded for proceedings consistent with this opinion.

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[14] Petitioner the State of New York argues that the order violates the requirement set forth in 42 U.S.C. § 5847 that fuel recycle activities be accompanied by appropriate site surveys; see note 5, *supra*. Petitioner notes that such surveys have not been completed and states that the grant of licenses prior to the surveys' completion would violate the statute. In light of our ruling that no commercial licenses may be granted until completion of the GESMO study, we will assume that the Commission will comply with all relevant site survey requirements, as well as with NEPA, before any licenses are granted. We have discussed petitioner NRDC's Atomic Energy Act claim in note 13.

APPENDIX C

UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT

Nos. 963, 1051—September Term, 1975

Docket Nos. 75-4276, 75-4278

Decided: September 8, 1976

Appeal Decided: April 12, 1976

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.,

AND

THE STATE OF NEW YORK, *Petitioners*,

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION

AND

THE UNITED STATES OF AMERICA, *Respondents*,

ALLIED GENERAL NUCLEAR SERVICES, ET AL., *Intervenors*.

Before CLARK, *Associate Justice*.

PIERCE and OWEN, *District Judges*.

On Petition for Rehearing

Per Curiam:

Respondents, the United States Nuclear Regulatory Commission and the United States, and certain Intervenors, petition for a rehearing of the court's decision in these cases dated May 26, 1976. In its petition, the Commission has pointed out certain factual errors in the opinion which have been corrected by separate order. Since respondents and intervenors advance no argument

which would require a different result in the disposition of these cases, the petitions for rehearing are denied.

Respondents seek to reargue the court's conclusion that the controversy was reviewable and its decision that the Commission must refrain from commercial licensing of mixed oxide fuel related activities pending the completion of the GESMO inquiry and a final Commission decision thereon.

The court adheres to its decision on reviewability. Respondents' arguments are but a recasting of those advanced on the original appeal and are no more persuasive in their present form.

Respondents' principal argument on the merits is based upon their reading of the recent Supreme Court decision in *Kleppe* v. *Sierra Club*, 44 U.S.L.W. 5104 (U.S. June 28, 1976), *reversing Sierra Club* v. *Morton*, 514 F.2d 856 (D.C. Cir. 1975). In *Kleppe*, the Supreme Court found error in the Circuit Court's decision to enjoin certain coal mining operations until the agency had completed a regional impact statement for the development of a four-state region. In so doing, the Supreme Court stressed that the agency had denied the existence of any regional plan, and found the Circuit Court's conclusion that such a plan was contemplated to be unsupported by the record. *Id.* at 5106-08. However, the Court observed that in the case of a national plan of development, a broad scale impact statement might be required by NEPA. *Id.* at 5107 n.14.

Nothing in the *Kleppe* decision requires an outcome contrary to the decision here. In its opinion, the court concluded that the Commission's decision to proceed to general commercial licensing of a new nuclear technology constituted major federal action not accompanied by an adequate environmental impact statement. Slip. Opin. at 3903, 3935. The GESMO study is the announced basis for the NEPA decision on the question of industry-wide im-

plementation of plutonium technology. The court's NEPA assessment of Draft GESMO was necessary since the Commission relied upon the Draft to support its decision to begin licensing. See 40 Fed. Reg. at 53061. The Commission's decision to commence commercial licensing without awaiting the results of the GESMO supplement was the fundamental error of the November 11, 1975 order.

Since it is clear that GESMO assesses a nationwide plan for the commercialization of mixed oxide fuel, this court's decision restraining the present plan for interim licensing was consistent with *Kleppe*. The court concluded that interim impact statements drafted in accordance with presently existing Commission rules and precedent would necessarily result in impact analyses inadequate under NEPA. Slip. Opin. at 3932, 3936-37; see *Kleppe, supra*, 44 U.S.L.W. at 5109 n. 16. Thus, this court's decision is in accordance with the NEPA analysis set forth in *Kleppe*.

Further, *Kleppe's* decision that the agency need not refrain from individual licensing was based upon the undisputed fact that the approval of one lease or mining plan does not commit the agency to license others. *Id.* at 5111 n. 26. Accordingly, *Kleppe* allowed activity which had independent utility and which was substantially independent from the issue of regional development. In this case the proposed activity is "clearly tied to the anticipated wide-scale use and would commit substantial resources to the mixed oxide fuel technology." Slip. Opin. at 3934-35.

Kleppe allowed the agency to continue the licensing of coal mining operations, an activity which has occurred in this nation for over a century. In this case the agency desires to commence the commercialization of a new and potentially dangerous nuclear fuel technology without complying with the procedural guidelines of NEPA.

The commercial use of plutonium raises fundamental environmental questions which require a scrupulously deliberate and complete assessment of the hazards presented

to our society. The statutes enacted by Congress will permit nothing less. NEPA was intended to insure that an agency make a thorough inquiry into significant environmental effects and potential hazards before embracing a major new technology. Until the GESMO supplement is completed, the Commission cannot adequately assess the consequences of its action.

For the foregoing reasons, the petitions for rehearing are in all respects denied.

APPENDIX D

UNITED STATES COURT OF APPEALS
SECOND CIRCUIT

At a Stated Term of the United States Court of Appeals, in and for the Second Circuit, held at the United States Court House, in the City of New York, on the twenty-sixth day of May, one thousand nine hundred and seventy-six.

(Filed May 26, 1976)

75-4276
75-4278

Present:

HON. TOM C. CLARK, *Associate Justice*

HON. LAWRENCE W. PIERCE

HON. RICHARD OWEN, *District Judges*
Circuit Judges.

NATURAL RESOURCES DEFENSE COUNCIL, SIERRA CLUB, ENVIRONMENTALISTS, INC., WEST MICHIGAN ENVIRONMENTAL ACTION COUNCIL, INC., NATIONAL INTERVENORS, INC., BUSINESSMEN FOR THE PUBLIC INTEREST, INC.,

Petitioners

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION, and THE UNITED STATES OF AMERICA,

Respondents.

ALLIED-GENERAL NUCLEAR SERVICES, ALLIED CHEMICAL NUCLEAR PRODUCTS, INC., AND GENERAL ATOMIC COMPANY, NUCLEAR FUEL SERVICES, INC., WESTINGHOUSE ELECTRIC CORP., BALTIMORE GAS AND ELECTRIC CO., ET AL., COMMONWEALTH EDISON COMPANY, ET AL., THE BABCOCK & WILCOX COMPANY, DETROIT EDISON COMPANY, BOSTON EDISON COMPANY, CONSUMERS POWER COMPANY, DUKE POWER COMPANY, LONG ISLAND LIGHTING COMPANY, NORTHEAST NUCLEAR ENERGY COMPANY, PACIFIC GAS & ELECTRIC COMPANY, PHILADELPHIA ELEC-

TRIC COMPANY, PUBLIC SERVICE ELECTRIC & GAS COMPANY, SOUTHERN CALIFORNIA EDISON COMPANY, THE CONNECTICUT LIGHT & POWER CO., THE HARTFORD ELECTRIC LIGHT CO., VIRGINIA ELECTRIC & POWER CO., WESTERN MASSACHUSETTS ELECTRIC CO., YANKEE ATOMIC ELECTRIC CO., EXXON NUCLEAR COMPANY, INC., NIAGARA MOHAWK POWER CORPORATION, OMAHA PUBLIC POWER DISTRICT, POWER AUTHORITY OF THE STATE OF N.Y., PUBLIC SERVICE CO. OF INDIANA, INC., ROCHESTER GAS & ELECTRIC CORPORATION.

THE STATE OF NEW YORK,

Petitioner,

v.

THE NUCLEAR REGULATORY COMMISSION,

Respondent.

ALLIED-GENERAL NUCLEAR SERVICES, ALLIED CHEMICAL NUCLEAR PRODUCTS INCORPORATED AND GENERAL ATOMIC COMPANY, NUCLEAR FUEL SERVICES, INC., WESTINGHOUSE ELECTRIC CORP., THE BABCOCK & WILCOX CO.,

Intervenors.

Petitions for review of an order of the United States Nuclear Regulatory Commission.

This cause came on to be heard on a certified list of items comprising the record of the United States Nuclear Regulatory Commission and was argued by counsel.

Upon consideration thereof, it is now hereby ordered, adjudged and decreed that the petitions be and they hereby are affirmed in part and reversed in part and that the action be and it hereby is remanded to said United States Nuclear Regulatory Commission for further proceedings consistent with the opinion of this court with costs to be taxed against respondents and intervenors.

A. DANIEL FUSARO,
Clerk

/s/ By VINCENT A. CARLEN
Chief Deputy Clerk

UNITED STATES COURT OF APPEALS SECOND CIRCUIT

At a stated term of the United States Court of Appeals, in and for the Second Circuit, held in the United States Court House, in the City of New York, on the eighth day of September, one thousand nine hundred and seventy-six.

Docket Nos. 75-4276, 75-4278

NATURAL RESOURCES DEFENSE COUNCIL, et al.,
Petitioners,

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION and UNITED STATES OF AMERICA,
Respondents.

ALLIED-GENERAL NUCLEAR SERVICES, et al.,
Intervenors.

A petition for rehearing containing a suggestion that the action be reheard en banc having been filed herein by counsel for the Intervenor (Westinghouse Electric Corporation)*, and no active judge or judge who was a member of the panel having requested that a vote be taken on said suggestion,

Upon consideration thereof, it is

Ordered that said petition be and it hereby is DENIED.

Judge Oakes has not participated in the consideration or decision.

/s/ IRVING R. KAUFMAN
Irving R. Kaufman
Chief Judge

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* Four other identical orders, except containing the names of other intervenors, were also entered September 8, 1976.

APPENDIX E

42 U.S.C. § 4332 (Section 102 of the National Environmental Policy Act) Provides in Part:

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, and (2) all agencies of the Federal Government shall—

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by subchapter II of this chapter, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of Title 5, and shall accompany the proposal through the existing agency review processes;

• • • • • • • • • •

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) recognize the worldwide and long-range character of environmental problems and, where consistent with foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) assist the Council on Environmental Quality established by subchapter II of this chapter.

42 U.S.C. § 2133 (Section 103 of the Atomic Energy Act as Amended) Provides:

(a) The Commission is authorized to issue licenses to persons applying therefor to transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, possess, use, import, or export under the terms of an agreement for cooperation arranged pursuant to section 2153 of this title, utilization or production facilities for industrial or commercial purposes. Such licenses shall be issued in accordance with the provisions of subchapter XV of this chapter and subject to such conditions as the Commission may by rule or regulation establish to effectuate the purposes and provisions of this chapter.

(b) The Commission shall issue such licenses on a nonexclusive basis to persons applying therefor (1) whose proposed activities will serve a useful purpose proportionate to the quantities of special nuclear material or source material to be utilized; (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish; and (3) who agree to make available to the Commission such technical information and data concerning activities under such licenses as the Commission may determine necessary to promote the common defense and security and to protect the health and safety of the public. All such information may be used by the Commission only for the purposes of the common defense and security and to protect the health and safety of the public.

(c) Each such license shall be issued for specified period, as determined by the Commission, depending on the type of activity to be licensed, but not exceeding forty years, and may be renewed upon the expiration of such period.

(d) No license under this section may be given to any person for activities which are not under or within the jurisdiction of the United States, except for the export of production or utilization facilities under terms of an agreement for cooperation arranged pursuant to section 2153 of this title, or except under the provisions of section 2139 of this title. No license may be issued to an alien or any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or foreign government. In any event, no license may be issued to any person within the United States if, in the opinion of the Commission, the issuance of a license to such person would be inimical to the common defense and security or to the health and safety of the public.

42 U.S.C. § 2201(b) (Section 161b of the Atomic Energy Act as Amended) Provides:

In the performance of its functions the Commission is authorized to—

(b) establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property;